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ON-SITE AIR BAG INVESTIGATION

CASE NO. - 96-15
FLEET - PRIVATE VEHICLE
LOCATION -
ACCIDENT DATE - 1996

Submitted By:

Senior Staff Associate
and

Associate Scientist

1996

Contract Number: DTNH22-94-D-17058

Prepared for:

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National Highway Traffic Safety Administration
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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

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16. <i>Abstract</i> This report covers an on-site investigation of an air bag deployment crash that involved a 1992 Mazda 929 (case vehicle) and a bridge rail. This crash is of special interest because the case vehicle's restrained driver (42-year-old female) sustained left eye injuries after being struck in the face by her deploying air bag. The case vehicle was initially traveling south in the inside, southbound, deceleration lane of a four-lane, southbound roadway (i.e., three through lanes and a deceleration lane). The roadway was part of a divided, U.S. highway. The case vehicle exited the U.S. highway and was traveling southeastward on a one-lane, one-way, left-hand curving, entrance ramp to an intersecting, interstate highway when she lost control on the wet roadway surface and impacted the bridge rail on the northeast side of the ramp. The front left bumper of the case vehicle impacted the bridge rail, causing the case vehicle's driver and front right passenger supplemental restraints (air bags) to deploy. After impact, the case vehicle rotated approximately 360 degrees counterclockwise across the entrance ramp where it departed the south side of the ramp and impacted the southwest bridge rail with its front right bumper corner. The case vehicle slid along the southern bridge rail a short distance before it came to rest facing east-southeast on the southwest shoulder of the entrance ramp, parallel to the bridge rail. The case vehicle's driver was seated with her seat track located between its middle and forward-most positions, and the case vehicle was not equipped with a tilt steering wheel. She was restrained by her available, active, three-point, lap and shoulder belt and sustained, according to her interview and her medical records minor left eye injuries from her deploying driver air bag. These injuries included: a corneal hyphema {contusion} and abrasion, a conjunctiva injury, a small vitreous hemorrhage, and periorbital abrasions and contusions. In addition, she sustained abrasions to her left forehead and chin from her air bag and seat belt-patterned contusions to her left shoulder, left anterior chest wall, and lower abdomen. Finally, she sustained a laceration to a web space on her left hand.			
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TRC/IU ON-SITE AIR BAG INVESTIGATION

TRC/IU CASE NO. 96-15

FLEET - PRIVATE VEHICLE
LOCATION -

SUMMARY

This report concerns a motor vehicle crash involving an air bag-equipped 1992 Mazda 929 (case vehicle) and a bridge rail occurring in 1996 at 3:15 p.m., in a city on the entrance ramp to an interstate highway. This crash is of special interest because the case vehicle's driver sustained minor left eye injuries after being struck in the face by her deploying air bag.

The case vehicle was initially traveling south in the inside, southbound, deceleration lane of a four-lane, southbound roadway (i.e., three through lanes and a deceleration lane). The roadway was part of a divided, U.S. highway. The case vehicle exited the U.S. highway. The case vehicle exited the U.S. highway and was traveling southeastward on a one-lane, one-way, left-hand curving, entrance ramp to an intersecting, interstate highway when she lost control on the wet roadway surface and impacted the bridge rail on the northeast side of the ramp.

The front left bumper of the case vehicle impacted the bridge rail. After impact, the case vehicle rotated approximately 360 degrees counterclockwise across the entrance ramp where it departed the south side of the ramp and impacted the southwest bridge rail. The case vehicle slid along the southern bridge rail a short distance before it came to rest facing east-southeast on the southwest shoulder of the entrance ramp, parallel to the bridge rail. The CDCs were determined to be: 11-FYEW-1 and 01-FREE-1 for the Mazda. The WinSMASH reconstruction program, damage only, barrier option algorithm, was used on the case vehicle's highest severity impact. The Total, Longitudinal, and Lateral Delta Vs are, respectively: 14.6 km.p.h. (9.1 m.p.h.), -12.6 km.p.h. (-7.8 m.p.h.), and -7.3 km.p.h. (-4.5 m.p.h.).

The case vehicle was equipped with both driver and front right passenger supplemental restraint systems (air bags) which deployed as a result of the initial frontal impact. The driver of the vehicle was seated with her seat track located between its middle and forward-most positions, and the case vehicle was not equipped with a tilt steering wheel. She was restrained by her available, active, three-point, lap and shoulder belt and sustained, according to her interview and her medical records minor left eye injuries from her deploying driver air bag. These injuries included: a corneal hyphema {contusion} and abrasion, a conjunctiva injury, a small vitreous hemorrhage, and periorbital abrasions and contusions. In addition, she sustained abrasions to her left forehead and chin from her air bag and seat belt-patterned contusions to her left shoulder, left anterior chest wall, and lower abdomen. Finally, she sustained a laceration to a web space on her left hand.

CRASH SCHEMATIC

TRC/IU CASE NO. 96-15

Scale: 1 cm = 2.5 m
(prior to reduction @ 94%)

Event Number One: Exact point of impact is unknown because of previous contacts to bridge rail



Case vehicle rotates counter-clockwise between impacts

Event Number Two: exact point of impact is unknown because of previous contacts to bridge rail

Case Vehicle's approximate Final Rest position

Road Surface: Concrete
Road Condition: Wet
Curvature: Left-hand curve

Grade, between impact and final rest = -4.0 %

TRC/IU ON-SITE AIR BAG INVESTIGATION

TRC/IU CASE NO. 96-15

FLEET - PRIVATE VEHICLE
LOCATION -

CRASH DATA

Location/Street:	Interstate Highway
State:	
Area/Type:	Urban, commercial
Crash Date/Time:	1995, @ 3:15 p.m.
Crash Type:	Car - ran-off-road (bridge rail)
Occupant Injury Severity (air bag vehicle):	Hyphema {contusion} left cornea (AIS-1)

AMBIENT CONDITIONS

Light Conditions:	Daylight
Weather Condition:	Precipitating per case vehicle's driver
Precipitation:	Rain
Road Surface:	Wet
Temperature:	44 degrees F @ applicable city weather station

ROADWAY

Case Vehicle

Location:	Entrance ramp to interstate highway
Number of Travel Lanes:	One-lane, one-way, on southeastbound entrance ramp; four-lanes, divided, for pre-crash southbound roadway
Width:	4.5 meters (14.8 feet) on entrance ramp
Surface Type:	Concrete, grooved
Median:	None, on bridge
Shoulders:	Northeast: 1.8 meters (5.9 feet); Southwest: 2.0 meters (6.6 feet)

ROADWAY (CONTINUED)

Case Vehicle

Vertical alignment: 4.0 %, negative to southeast
Horizontal alignment: Curve left
Estimated Coefficient of Friction: .60
Traffic Density: Heavy to moderate per case vehicle's driver

TRAFFIC CONTROLS

Case Vehicle

Signals: None
Signs: UNEVEN PAVEMENT Warning Sign (road maintenance); left exit arrow to intersecting interstate Information Sign
Markings: Solid white edge line on right (southwest) side with Raised Pavement Markers; solid yellow edge line on left (northeast)
Speed Limit: 56 km.p.h. (35 m.p.h.) on entrance ramp

VEHICLES¹Case Vehicle

Year: 1992
Make: Mazda
Model: 929
Body Type: Four-door sedan, five¹-passengers
V.I.N. JM1HD4617N0-----
Color: White
Mileage: 75,089 km (46,658 miles)
Engine: 3.0 liters, V-6, DOHC
Transmission: Automatic, four-speed

¹ According to the photographs and AUTO NEWS, the case vehicle seated five passengers; Branham's, which this contractor mistakenly relied on for our photographic footers, indicated that it was a six-passenger vehicle.

VEHICLES² (CONTINUED)Case Vehicle

Steering:	Power-assisted, rack-and-pinion
Brakes:	Power-assisted, four-wheel disc
Padding:	Steering wheel and hub, sun visors, dash and knee bolsters, "A"-pillars, side door surfaces
Active Restraints:	Three-point, manual, lap and shoulder belts in front and rear outboard seating positions; lap belt only at rear center position
Passive Restraints:	Factory installed driver and front right passenger supplemental restraint systems (air bags)
Defects:	None ²
Fleet:	Private vehicle
Tow status:	Towed due to damage

VEHICLE DAMAGE

EXTERIORCase VehicleDeployment Impact

Event number:	First
Object Struck:	Bridge rail
Damage location	
Damaged Plane:	
Vertical Location	Front
On Plane:	
Direct Begins:	Bumper
Length Direct:	At left bumper corner
Field L:	60 cm (23.6 in)
C ₁ :	131 cm (51.6 in)
C ₂ :	20 cm (7.9 in)
C ₃ :	19 cm (7.5 in)
C ₄ :	14 cm (5.5 in)
C ₅ :	13 cm (5.1 in)
C ₆ :	6 cm (2.4 in)
D:	0 cm (0.0 in)
	-41 cm (-16.1 in)

² The case vehicle's driver indicated that the vehicle had a steering problem; according to an engineering firm hired to assess the case vehicle's steering and front end components, no defects were found.

VEHICLE DAMAGE (CONTINUED)

EXTERIOR (Continued)**Case Vehicle****Deployment Impact** (Continued)

Maximum Crush: 20 cm (7.9 in)
 Location: C₁

CDC: 01-FYEW-1 (+30)

Damaged Components: Bumper, grille, hood, left headlight assembly, and left fender

Nondeployment Impact

Event number: Two

Object Struck: Bridge rail

Damage location

Damaged Plane: Front

Vertical Location

On Plane: Bumper

Direct Begins: At right bumper corner

Length Direct: Unknown because of overlapping damage

Field L: Unknown because of overlapping damage

C₁: Unknown because of overlapping damage

C₂: Unknown because of overlapping damage

C₃: Unknown because of overlapping damage

C₄: Unknown because of overlapping damage

C₅: Unknown because of overlapping damage

C₆: Unknown because of overlapping damage

D: Unknown because of overlapping damage

Maximum Crush: Unknown because of overlapping damage

Location: C₆

CDC: 01-FREE-1

Damaged Components: Bumper, right headlight assembly, and right front fender

INTERIOR

Damaged Components: Driver and front right passenger air bag modules

Other Evidence of
 Occupant Contact: None

Manual Restraint
 System Failures: None

Seat Performance
 Failures: None

VEHICLE DAMAGE (CONTINUED)

REPAIR**Case Vehicle**

Cost Estimate: Totalled by insurance company; book value is \$13,950 to \$16,450 per I.U. Credit Union auto loan department

VEHICLE VELOCITY ESTIMATES³**Highest Delta "V"****Case Vehicle**

Reconstruction Program: WinSMASH

Program Algorithm: Damage only, barrier option

Travel Speed³: 64.0 km.p.h. (40.0 m.p.h.)

Total Delta "V": 14.6 km.p.h. (9.1 m.p.h.)

Longitudinal Delta "V": -12.6 km.p.h. (-7.8 m.p.h.)

Lateral Delta "V": -7.3 km.p.h. (-4.5 m.p.h.)

COLLISION SEQUENCE

PRE-CRASH: The case vehicle (929) was initially traveling south in the inside, southbound, deceleration lane of a four-lane, southbound roadway (i.e., three through lanes and a deceleration lane). The roadway was part of a divided, U.S. highway. The case vehicle exited the U.S. highway and was traveling southeastward on a one-lane, one-way, left-hand curving, entrance ramp to an intersecting, interstate highway and was intending to continue along the ramp and eventually travel eastward on the interstate highway. The case vehicle's driver lost control on the wet roadway surface and subsequently began a counterclockwise rotation, traveling to her left toward the bridge rail on the northeast side of the ramp. According to the case vehicle's driver, she braked (without lockup) and steered to her right attempting to regain control of her vehicle. Despite the attempted avoidance maneuvers, the case vehicle continued eastward, in a counterclockwise yaw and traveled off the north edge of the roadway prior to impact. The crash occurred on the interstate entrance ramp when the case vehicle struck the bridge rail located beyond the northeast shoulder.

CRASH: The front left bumper of the case vehicle impacted the bridge rail, causing the case vehicle's driver and front right passenger supplemental restraints (air bags)

³ According to the case vehicle's driver, she indicated that her speed prior to the crash was between 48 and 64 km.p.h. (30-40 m.p.h.). The ramp's speed limit is 56 km.p.h. (35 m.p.h.). Given that the Police Crash Report indicates that the case vehicle's speed was a contributing factor and that most speed limits represent conservative estimates of a road section's speed design, this contractor estimates that the case vehicle was travelling at least 64 km.p.h. (40 m.p.h.).

COLLISION SEQUENCE (CONTINUED)

Crash: (Continued)

to deploy⁴. After impact, the case vehicle continued to rotate counterclockwise and rebounded across the entrance ramp where it departed the south side of the ramp and impacted the bridge rail located beyond the southwest shoulder. The case vehicle slid along the southern bridge rail a short distance before it came to rest facing east-southeast on the southwest shoulder of the entrance ramp, parallel to the bridge rail.

POST-CRASH:

Occupants: The driver of the case vehicle remained inside the vehicle at final rest. According to the case vehicle's driver, she was conscious and was able to exit the case vehicle under her own power. At final rest the case vehicle's driver was found sitting upright in the back seat of a passer-by's vehicle and had walked from her vehicle to the other car prior to their arrival. She was restrained by her available, manual, three-point, lap and shoulder belt at the time of the crash.

Police: The investigating police agency was notified of the crash within 20 minutes and arrived on-scene within 25 minutes. Traffic control procedures were established and emergency medical and towing services were called to assist.

Rescue: The driver was transported by ambulance to a medical facility where she was hospitalized for three days. According to her interview and her medical records, she sustained minor⁵ left eye injuries from her deploying driver air bag. These injuries included: a corneal hyphema {contusion} and abrasion, a conjunctiva injury, a small vitreous hemorrhage, and periorbital abrasions and contusions. In addition, she sustained abrasions to her left forehead and chin from her air bag and seat belt-patterned contusions to her left shoulder, left anterior chest wall, and lower abdomen. Finally, she sustained a laceration to a web space on her left hand.

Removal: Following the police investigation, the case vehicle was towed from the scene.

HUMAN FACTORS/OCCUPANT DATA

<u>DRIVER:</u>	<u>Case Vehicle</u>
Age:	42-year-old
Sex:	Female

⁴ According to the case vehicle's driver, she indicated that her air bags did not deploy on the initial bridge rail impact; however, based on the case vehicle's crush pattern (see **SELECTED PHOTOGRAPHS #11, #12, #17, and #18**), this contractor believes that the initial impact did in fact deploy the air bags.

⁵ Although all of this occupant's eye injuries were A.I.S. = 1, she was hospitalized for three (3) days as a result of her eye injuries.

HUMAN FACTORS/OCCUPANT DATA⁶ (CONTINUED)

Height:	157 centimeters (68 inches)
Weight:	68 kilograms (150 pounds)
Occupation:	Service Worker (i.e., hair stylist)
Active Restraint System/Usage:	Three-point lap and shoulder/Used
Usage Source:	Vehicle inspection, interviewee, and Police Crash Report
Passive Restraint System/Usage:	Dealer re-installed ⁶ air bag/air bag deployed
Usage Source:	Vehicle inspection, interviewee, and Police Crash Report
Eyeglasses/contacts:	None
Vehicle Familiarity:	Six days and 97 kilometers (60 miles) total (i.e., vehicle was purchased used)
Route Familiarity:	Twice weekly
Trip Plan:	Work to shopping
Manner of Leaving Scene:	Ambulance
Type of Medical Treatment:	Hospitalized

CASE VEHICLE DRIVER INJURIES⁷

<u>Description of Injury⁷</u>	<u>A.I.S.</u>	<u>Source of Data</u>	<u>Injury Mechanism</u>	<u>Certainty</u>
Hyphema {contusion} left cornea	240604.1,2	2	Air bag, driver's side	{Certain}

⁶ The case vehicle's insurance company indicated that the case vehicle had been involved in a previous crash in which the vehicle's air bags had deployed. As a result of the previous crash, the air bags that deployed in this crash had been re-install by a dealer.

⁷ Two problems with this driver's left eye were cited in her medical records but are not included in A.I.S. '90, and therefore, are not listed (i.e., coded) below. These problems include: commotio retina (retinal concussion) and iridodialysis (iris separation). DORLAND'S ILLUSTRATED MEDICAL DICTIONARY defines these key terms as shown below. In addition, the driver developed a cataract in her left eye as a result of the trauma.

cataract (*kat'a-rakt*): an opacity, partial or complete, of one or both eyes, on or in the lens or capsule, especially an opacity impairing vision or causing blindness. The many kinds of cataract are classified by their morphology (size, shape, location) or etiology (cause and time of occurrence). **traumatic c**: a cataract resulting from injury to the eye, either immediately after injury (e.g., from perforation of the capsule) or years later (e.g., from concussion of the lens without a rupture of the capsule).

commotio{nal} (*ka-mo'she-o*): a concussion; a violent shaking, or the shock which results from it. **c. retinae**: edema around the macular region of the retina, caused by a severe blow to the eyeball, and producing a permanent central scotoma as a result of destruction of the delicate cones in the fovea; called also *Berlin's disease* or *edema*, and *concussion of the retina*.

CASE VEHICLE DRIVER INJURIES^{8,9,10} (CONTINUED)

<u>Description of Injury⁸</u>	<u>A.I.S.</u>	<u>Source of Data</u>	<u>Injury Mechanism</u>	<u>Certainty</u>
Abrasion ⁹ left cornea	240602.1,2	2	Air bag, driver's	{Certain}
Injury ¹⁰ conjunctiva	240416.1,2	2	Air bag, driver's	{Certain}
Hemorrhage, small, vitreous	241699.1,2	2	Air bag, driver's	{Certain}
Abrasions, left periorbital, including left eyelid	297202.1,2	2	Air bag, driver's	{Certain}
Contusion {ecchymosis} left periorbital	297204.1,2	2	Air bag, driver's	{Certain}
Abrasion left forehead	290202.1,7	3	Air bag, driver's	{Certain}
Abrasion chin	290202.1,8	3	Air bag, driver's	{Certain}
Contusion left anterior chest wall	490402.1,2	2	Torso portion of driver's seat belt	{Certain}
Contusion abdomen	590402.1,8	7	Lap portion of driver's seat belt	{Probable}
Contusion left shoulder	790402.1,2	7	Torso portion of driver's seat belt	{Probable}
Laceration to a web space on left hand	790602.1,2	2	Flying glass	{Possible}

⁸ **fovea (fo've-a):** a pit or depression; a general term for a small pit in the surface of a structure or organ. Often used alone to indicate the central fovea of the retina. **central f. of retina, f. centralis retinae:** a tiny pit, about one degree wide, in the center of the macula lutea, which in turn presents an extremely small depression (foveola) containing rod-like elongated cones; it is the area of most acute vision, because here the layers of the retina are spread aside, permitting light to fall directly on the cones.

foveola (fo've'o-la): a small pit; a general term for an extremely small depression.

irid(o): a combining form meaning iridescent, or denoting relationship to the iris.

iridodialysis (ir'i-do-di-al'a-sis): separation or loosening of the iris from its root at the ciliary body, either from trauma or from surgical accident.

macula (mak'u-lah): a stain, spot, or thickening; a general term for an area distinguishable by color or otherwise from its surroundings. Often used alone to refer to the macula retinae. **m. retinae:** an irregular yellowish depression on the retina, about three degrees wide, lateral to and slightly below the optic disk; it is the site of absorption of short wavelengths of light, and it is thought that its variation in size, shape, and coloring may be related to variant types of color vision. Called also *m. lutea retinae*.

macular (mak'u-lar): pertaining to or characterized by the presence of maculae; pertaining to the macula retinae.

retina (ret'i-nah): the innermost of the three tunics of the eyeball, surrounding the vitreous body and continuous posteriorly with the optic nerve. It is divided into the *pars optica*, which rests upon the choroid, the *pars ciliaris*, which rests upon the ciliary body, and the *pars iridica*, which rests upon the posterior surface of the iris.

sclera (skle'rah): the tough white outer coat of the eyeball, covering approximately the posterior five-sixths of its surface, and continuous anteriorly with the cornea and posteriorly with the external sheath of the optic nerve.

scotoma{ta} (sko-to'ma): an area of lost or depressed vision within the visual field, surrounded by an area of less depressed or of normal vision.

⁹ This lesion was also described as an epithelial defect and was noted on the Discharge Summary as: 7.5 x 8.4 millimeters in size. This key term is defined in DORLAND'S ILLUSTRATED MEDICAL DICTIONARY as follows:

epithelial (ep'i-the'le-al): pertaining to or composed of epithelium.

epithelium (ep'i-the'le-am): the covering of internal and external surfaces of the body, including the lining of vessels and other small cavities. It consists of cells joined by small amounts of cementing substances. Epithelium is classified into types on the basis of the number of layers deep and the shape of the superficial cells. **e. anterieus corneae, anterior e. of cornea:** the outer epithelial layer of the cornea, consisting of stratified squamous epithelium continuous with that of the conjunctiva; called also *e. corneae* or *corneal e.*

¹⁰ This injury was described as hemorrhage and chemosis which is defined in DORLAND'S ILLUSTRATED MEDICAL DICTIONARY as follows:

chemosis (ke-mo'sis): excessive edema of the ocular conjunctiva.

CASE VEHICLE DRIVER KINEMATICS

Immediately prior to the crash she was seated upright with her back against the seat back, her left foot on the floor, her right foot on the brake, and both hands on the steering wheel. According to the case vehicle's driver, her seat track was located between its middle and forward-most position and the seat back was upright. During the vehicle inspection, the driver's seat track was located in the middle position with the seat back in the slightly reclined position¹¹, and the case vehicle was not equipped with a tilt steering wheel. The case vehicle's driver was restrained by her available, active, three-point, lap and shoulder belt. During the vehicle inspection, the seat belts showed recent usage but no conclusive evidence of usage during the crash. In this contractor's opinion, based on her medical records, the driver's absence of lower extremity injuries plus the reported seat belt-patterned bruises to her shoulder, chest, and abdomen indicates definite usage.

The case vehicle's driver steered to the right and braked, attempting to avoid the crash. As a result of these attempted avoidance maneuvers and the use of her available safety belts, just prior to impact she most likely moved slightly forward and to her left with her head cocked leftward and her face turned toward the right¹².

The case vehicle departed the left side of the roadway striking the bridge rail. According to the case vehicle's driver, the initial and primary impact with the left bridge rail did not deploy¹³ the case vehicle's air bags, but instead the secondary/minor impact with the right bridge rail caused them to deploy. Based on the vehicle inspection (*see further discussion below*) and occupant kinematic principles, the case vehicle's primary impact with left bridge rail, not only deployed the driver's air bag, but thrust the driver forward and slight leftward loading her three-point lap and shoulder belt. The driver's safety belts most likely kept the driver in a relatively good driving position. An inspection of the driver's air bag revealed a distinct lipstick deposit and what appears to be facial makeup moving up and toward the right side of the air bag; see **SELECTED PHOTOGRAPHS #22 through #24**. In addition, there does not appear to be occupant interaction evidence on the driver air bag module's cover flaps; see **SELECTED PHOTOGRAPH #27**.

As a result of the initial impact and the deflection marks on the driver air bag, the case vehicle's driver most likely rebounded back to her right as the case vehicle rotated counterclockwise. During the rotation, the driver most likely moved from side-to-side while her safety belt system constrained the severity of her movement. The bridge rail performed as designed and kept the case vehicle on the road. As the vehicle's rotation slowed from frictional forces and prior to impacting the right side bridge rail, the case vehicle's driver attempted to avoid the secondary

¹¹ In this contractor's opinion, the case vehicle's driver was not exactly sure how she had her seat positioned.

¹² **SELECTED PHOTOGRAPHS #22 through #24** show that the driver's lips were slightly left of the air bag's center and that her head was cocked toward the left. The exclusive nature of driver's left facial injuries indicates that she took the blunt of the deployment with the left side of her face.

¹³ The driver's claim that the air bags did not deploy on the initial most severe impact is very much questioned by this contractor. However, it is possible that the initial impact was primarily to the case vehicle's bumper, and the sensors, which are located above the bumper, were not tripped because of the elongated crash pulse (i.e. the long Delta T). In this contractor's opinion, this scenario would be more likely if the case vehicle had struck a normal guardrail, but the case vehicle impacted a bridge rail, which according to the scene inspection and photographs shows no deformation; see **SELECTED PHOTOGRAPHS #03 and #04**. In addition, it is also possible that there was a delayed reaction in the deployment of the air bags as has been observed in past Special Crash Investigation cases involving deer impacts. It should be noted that the case vehicle was involved in a previous crash and that the case vehicle's air bags, and most likely the sensors, had been re-installed by a dealership.

CASE VEHICLE DRIVER KINEMATICS (CONTINUED)

impact by continuing to brake and steering back to her left. This maneuver would explain the damage to the case vehicle's front right corner and right front fender.

The impact with the right bridge rail was such a minor impact that the driver most likely would have moved only slightly to her right as a result of this impact. According to the case vehicle's driver, it was the impact with the right bridge rail that deployed the air bag. Based on a comparison of the damage the case vehicle sustained in the crash (i.e., front left damage versus front right damage), it is this contractor's opinion that the air bag deployed in the first impact with the left bridge rail rather than the second impact. It is entirely possible that the driver was stunned by her deploying driver air bag and, as a result, is just not sure of the sequence of events.

After the impact with the right bridge rail, the case vehicle came to rest. At final rest the case vehicle was facing south completely off the roadway and on the south shoulder. This contractor agrees that the case vehicle was off the roadway on the shoulder, but the case vehicle was most likely facing southeast.

AIR BAG SYSTEM

	<u>DRIVER AIR BAG</u>	<u>PASSENGER AIR BAG</u>
Air Bag Diameter (seam-to-seam, deflated):	Width: 63 cm (24.8 in) Height: 58 cm (22.8 in)	Width: 63 cm (24.8 in) Height: 58 cm (22.8 in)
Number of Vent Holes:	Two	Two
Vent Hole Diameter:	3.0 cm (1.2 in)	4.5 cm (1.8 in)
Vent Hole Clock Positions:	Approximately 11 and 1 o'clock	Approximately 10 and 2 o'clock
Number of Air Bag Tethers:	None	None
Number of Air Bag Module Cover Flaps:	Two	Two
Upper Cover Flap Dimensions:	Width: 19 cm (7.5 in) Height: 8 cm (3.1 in)	Width: 18 cm (7.1 in) Height: 9 cm (3.5 in)
Lower Cover Flap Dimensions:	Width: 18 cm (7.1 in) Height: 8 cm (3.1 in)	Width: 18 cm (7.1 in) Height: 8 cm (3.1 in)

AIR BAG SYSTEM (CONTINUED)

	<u>DRIVER AIR BAG</u>	<u>PASSENGER AIR BAG</u>
Distance between Dash and Module's Cover Flap:	Not applicable	Not measured because no occupant was present
Generant Residue:	No unusual amount found	No unusual amount found

Appendix A:

WINSMASH PROGRAM RESULTS

CASE NUMBER IN 9615

**NO
DATA**

The following page(s) were left intentionally blank.

PAGE NUMBER(S)

16 AND 17



U.S. Department of Transportation
National Highway Traffic Safety
Administration

SMASH PROGRAM SUMMARY

(All Measurements in Metric)

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

Identifying Title

10

Primary
Sampling Unit

9615

Case No.-Stratum

01

Accident Event
Sequence No.

196

Date (Month, day, year) of Run

GENERAL INFORMATION

VEHICLE 1

NASS Vehicle Number

Year

Make

Model

Body Style

CDC

PDOF

Heading Angle

01
1992

Mazda

929

4D

01 FY EW1

± 30°

± 97°

VEHICLE 2

NASS Vehicle Number

Year

Make

Model

Body Style

CDC

PDOF

Heading Angle

BAR R I E R

±

±

VEHICLE SPECIFICATIONS

VEHICLE 1

Wheelbase

Overall Length

Overall Width

Weight

1631 + 68 + 0 = 1699 kg

Curb Occupant(s) Cargo

Engine Displacement

Drive System

Size

Stiffness

285 cm

492 cm

180 cm

3.0 L

RWD

3

3

VEHICLE 2

Wheelbase

Overall Length

Overall Width

Weight

+ + = kg

Curb Occupant(s) Cargo

Engine Displacement

Drive System

Size

Stiffness

cm

cm

cm

L

DAMAGE INFORMATION

VEHICLE 1

Damage Known?

Damage Length

Damage Offset

Crush Depth:

142 Y
41 cm

± 41 cm

C1 20 cm

C2 19 cm

C3 14 cm

C4 13 cm

C5 6 cm

C6 0 cm

VEHICLE 2

Damage Known?

Damage Length

Damage Offset

Crush Depth:

cm

cm

± cm

C1 cm

C2 cm

C3 cm

C4 cm

C5 cm

C6 cm

National Accident Sampling System-Crashworthiness Data System: SMASH Program Summary

SCENE INFORMATION

Rest and Impact Positions ☐ No ☐ Yes

VEHICLE 1

Rest X _____ m
 Position Y _____ m
 Heading Angle _____ °
 Impact X _____ m
 Position Y _____ m
 Heading Angle _____ °
 Slip Angle (-180 to +180) _____ °

VEHICLE 2

Rest X _____ m
 Position Y _____ m
 Heading Angle _____ °
 Impact X _____ m
 Position Y _____ m
 Heading Angle _____ °
 Slip Angle (-180 to +180) _____ °

VEHICLE MOTION

Sustained Contact ☐ No ☐ Yes

VEHICLE 1

Vehicle Rotation ☐ No ☐ YesRotation Stop Before Rest ☐ No ☐ Yes

End of Rotation X _____ m

Position Y _____ m

Heading Angle _____ °

Curved Path ☐ No ☐ Yes

Point on Path

X _____ m Y _____ m

Rotation Direction ☐ None ☐ CW ☐ CCWRotation >360° ☐ No ☐ YesSustained Contact ☐ No ☐ Yes

VEHICLE 2

Vehicle Rotation ☐ No ☐ YesRotation Stop Before Rest ☐ No ☐ Yes

End of Rotation X _____ m

Position Y _____ m

Heading Angle _____ °

Curved Path ☐ No ☐ Yes

Point on Path

X _____ m Y _____ m

Rotation Direction ☐ None ☐ CW ☐ CCWRotation >360° ☐ No ☐ Yes

FRICTION INFORMATION

Coefficient of Friction _____

Rolling Resistance Option

1

Vehicle 1 Rolling Resistance

LF _____
 RF _____
 LR _____
 RR _____

Vehicle 2 Rolling Resistance

LF _____
 RF _____
 LR _____
 RR _____

IF THIS COMMON IMPACT WAS WITH A CDS VEHICLE NOT IN TRANSPORT, FILL IN THE INFORMATION BELOW.

Model Year: _____

Make: _____

Model: _____

VIN: _____

The Weight, CDC, Scene Data and Damage Information for this vehicle should be recorded above.

Complete and Attach the appropriate

Damage sketch and dimensions to the form

General Information

SCI96-015

	<u>Vehicle 1</u>	<u>Vehicle 2</u>
Year:	1992	
Make:	Mazda	
Model:	929	
Body Style:	4S	
CDC:	01FYEW1	BARRIER
Damaged Side:		
PDOF:	30°	0°
Heading Angle:	97°	0°

Vehicle Information

	<u>Vehicle 1</u>	<u>Vehicle 2</u>
Wheelbase:	285.0 cm	0.0 cm
Length:	492.0 cm	0.0 cm
Width:	180.0 cm	0.0 cm
Weight:	1699.0 kg	454545.0 kg
Center of Gravity:	228.1 cm	127.0 cm
Radius of Gyration:	147.6 cm	0.0 cm
D0:	102.2 sqrt(N)	0.0 sqrt(N)
D1:	7.3 sqrt(N)/cm	0.0 sqrt(N)/cm
Size Category:	3	11
Stiffness Category:	3	0

Vehicle 1: Used d0 and d1 values estimated from the vehicle size.
Vehicle 2: Used d0 and d1 values estimated from the vehicle size.

Damage Information

	<u>Vehicle 1</u>	<u>Vehicle 2</u>
Damage Length:	142.0 cm	0.0 cm
Damage Offset:	0.0 cm	0.0 cm
Field L - D:	-41.0 cm	0.0 cm
C1:	20.0 cm	
C2:	19.0 cm	
C3:	14.0 cm	
C4:	13.0 cm	
C5:	6.0 cm	
C6:	0.0 cm	

Summary of Results Using Damage

Vehicle 1

	Speed Change (Damage)
Total:	14.6 km/h
Longitudinal:	-12.6 km/h
Latitudinal:	-7.3 km/h
PDOF:	30°

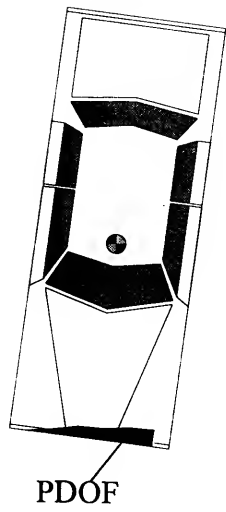
Energy Dissipated:	27,498 Joules
Barrier Equivalent Speed:	14.6 km/h
Moment Arm of Principle Force:	-145.8 cm (CCW)
Change in Angular Velocity:	-1.6 deg/seconds

Used d0 and d1 values estimated from the vehicle size.

Vehicle 2

Barrier

Damage



1992 Mazda 929 4S

BARRIER

Appendix B:

SELECTED PHOTOGRAPHS

A total of thirty-four color copies of photographs are presented and referenced as Photograph #01 through Photograph #34. All of these photographs were taken by the Transportation Research Center.



01: Case Vehicle's curved southbound path of travel entering entrance ramp to east-bound interstate approximately 50 meters (164 feet) from initial impact



02: Case Vehicle's curved southbound path of travel entering entrance ramp to east-bound interstate approximately 40 meters (131 feet) from initial impact



03: Case Vehicle's southeastward travel path in entrance ramp; NOTE: black scuffing (cell C6) from left front tire on left barrier indicates initial impact location



04: Eastward view of contact damage to left (North) longitudinal barrier from Case Vehicle's front left corner and left front tire (cells D5--E4)



05: Southward view of contact damage to right (South) longitudinal barrier from Case Vehicle's front right corner and right front tire (cells D5--H6)



06: Northwestward view of Case Vehicle's southeastward travel path from area of final rest



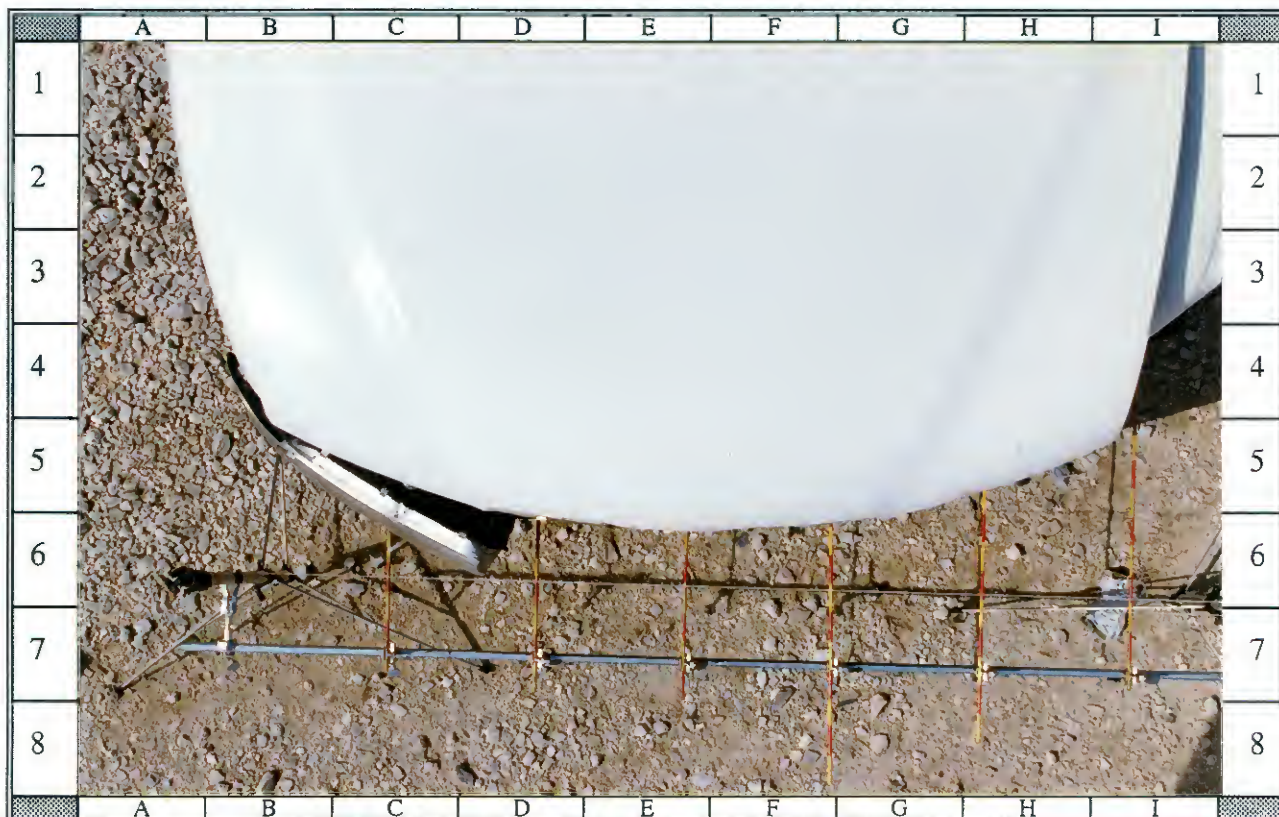
07: North-northwestward view of Case Vehicle's southward travel path viewed from area across from Case Vehicle's initial barrier impact (i.e., at right side of photo)



08: Case Vehicle's damaged front with contour gauge present; NOTE: bumper torn away and front left crush is more extensive than front right crush



09: Close-up of Case Vehicle's frontal damage viewed at bumper level with contour gauge present; NOTE: bumper and left front headlight assembly are gone



10: Overhead view of Case Vehicle's damaged front; NOTE: crush measurements extend underneath hood edge



11: Case Vehicle's damaged front viewed from approximately 45 degrees left of front; NOTE: extensive crush penetration at left front corner



12: Reference line view of Case Vehicle's frontal damage from left; NOTE: crush penetration at frame is much more extensive to front left than to front right



13: Case Vehicle's damaged left rear window viewed from approximately 15 degrees front of left; NOTE: window was shattered during the deployment of the air bags



14: Case Vehicle's shattered left rear window viewed from approximately 30 degrees back of left; NOTE: undamaged left side rearward of left front wheel



15: Case Vehicle's undamaged left side (behind left front wheel, except left rear window) and back viewed from approximately 30 degrees left of back



16: Case Vehicle's undamaged right side (i.e., behind right front wheel) and back viewed from approximately 30 degrees right of back



17: Reference line view of Case Vehicle's frontal damage from right; NOTE: direct damage to right front corner and fender from second longitudinal barrier impact



18: Case Vehicle's damaged front viewed from approximately 30 degrees right of front; NOTE: front left crush is more extensive than front right crush



19: Interior surface of Case Vehicle's driver door, driver's seating area, and deployed air bags; NOTE: contact evidence to driver's air bag



20: Case Vehicle's driver seating area showing noncontacted instrument panel, knee bolster, and lower steering column



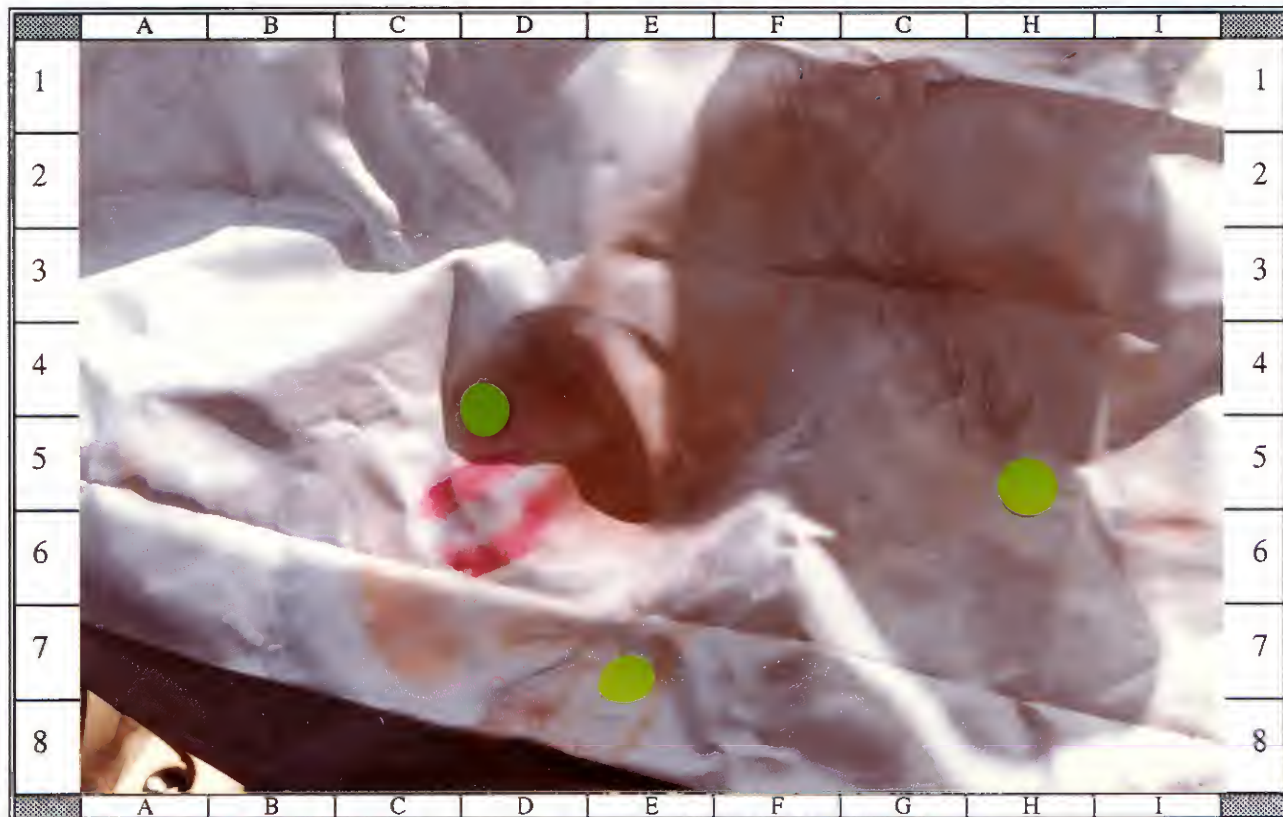
21: Panoramic view of Case Vehicle's greenhouse area showing deployed air bags and undamaged glazing; NOTE: multiple contacts to driver's side air bag



22: Vertical view of Case Vehicle's driver seating area, greenhouse, and deployed air bag; NOTE: lipstick and makeup transfers to driver's air bag



23: Closer-up view from rear center of contact evidence to Case Vehicle's driver air bag showing distinct lipstick imprint



24: Closest-up view of contact evidence to Case Vehicle's driver air bag; NOTE: lipstick, eye, and face make-up transfers



25: Close-up view of mucous transfer (below green dot--cell E5) to upper portion of Case Vehicle's driver air bag



26: Close-up view of slight tear (cells E4--E5) found on backside of Case vehicle's deployed driver air bag; NOTE: mark on cover flap (cell G3)



27: Close-up of unknown mark on Case Vehicle's driver side air bag module's top cover flap; NOTE: mark is most likely not from occupant contact



28: Close-up of Case Vehicle's driver side air bag module's bottom cover flap and steering wheel rim; NOTE: no evidence of contact or deformation



29: Right side of Case Vehicle's driver knee bolster and center instrument panel showing no evidence of contact



30: Vertical view of Case Vehicle's deployed right front passenger air bag, front dash, windshield, and rearview mirror viewed from center rear seat



31: Closer-up view from rear center of Case Vehicle's deployed, noncontacted, right front passenger air bag; NOTE: driver only occupant in vehicle



32: Case Vehicle's front seating area, greenhouse, and deployed air bags viewed from outside right front passenger door



33: Interior surface of Case Vehicle's right front passenger door, seating area, and deployed air bag; NOTE: no right front occupant or contact evidence



34: Case Vehicle's rear seating area; NOTE: front and rear headrests, outboard three-point belts, and blown-out left rear window

TRANSPORTATION RESEARCH CENTER

Indiana University
Bloomington, Indiana 47403-1599

ON-SITE AIR BAG INVESTIGATION

NASS CDS FORMS AND MEDICAL RECORDS

CASE NO. - 96-15
FLEET - PRIVATE VEHICLE
LOCATION -
ACCIDENT DATE - 1996

Submitted By:

Senior Staff Associate
and

Associate Scientist

1996

Revised Submission:

1999

Contract Number: DTNH22-94-D-17058

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590-0003

POLICE CRASH REPORT

PLACE WHERE ACCIDENT OCCURRED				CITY OR TOWN				SHOW MAP IF NEAR CITY LIMITS				LOC. NO.			
COUNTY				MILES				NORTH S E W OF				DO NOT WRITE IN THIS SPACE			
IF ACCIDENT WAS OUTSIDE CITY LIMITS, INDICATE DISTANCE FROM NEAREST TOWN															
ROAD ON WHICH ACCIDENT OCCURRED				ROUTE NUMBER OR STREET CODE				CONSTR. YES NO				SPEED LIMIT			
INTERSECTING STREET OR RR XING NUMBER				ROUTE NUMBER OR STREET CODE				CONSTR. YES NO				SPEED LIMIT			
NOT AT INTERSECTION				SHOW ONLY IF NEAREST INTERSECTION NUMBERED HIGHWAY											
DATE OF ACCIDENT				DAY OF WEEK				HOUR				I.A.M. IF EXACTLY NOON			
UNIT NO. 1 - MOTOR VEHICLE				VEH IDENT NO.				IF BODY STYLE = VAN OR BUS, INDICATE SEATING CAPACITY							
YEAR MODEL				COLOR & MAKE				MODEL NAME				BODY STYLE			
DRIVER'S NAME				LAST FIRST MIDDLE				ADDRESS				CITY STATE			
DRIVER'S LICENSE				DOB				RACE				SEX			
SPECIMEN TAKEN (ALCOHOL/DRUG ANALYSIS)				ALCOHOL/DRUG ANALYSIS RESULT				PEACE OFFICER, EMS DRIVER, FIRE FIGHTER ON EMERGENCY?							
1-BREATH 2-BLOOD 3-OTHER 4-NONE 5-REFUSED															
LESSOR				NAME (REMARKS SHOW LESSEE IF LEASED, DIVORCED, SHOW DIVORCE)				ADDRESS				CITY STATE			
LIABILITY				INSURANCE COMPANY NAME				POLICY NUMBER				VEHICLE DAMAGE RATING			
1-YES															
2-NO															
UNIT NO. 2 - TOWED				VEH IDENT NO.				IF BODY STYLE = VAN OR BUS, INDICATE SEATING CAPACITY							
YEAR MODEL				COLOR & MAKE				MODEL NAME				BODY STYLE			
DRIVER'S NAME				LAST FIRST MIDDLE				ADDRESS				CITY STATE			
DRIVER'S LICENSE				DOB				RACE				SEX			
SPECIMEN TAKEN (ALCOHOL/DRUG ANALYSIS)				ALCOHOL/DRUG ANALYSIS RESULT				PEACE OFFICER, EMS DRIVER, FIRE FIGHTER ON EMERGENCY?							
1-BREATH 2-BLOOD 3-OTHER 4-NONE 5-REFUSED															
LESSOR				NAME (REMARKS SHOW LESSEE IF LEASED, DIVORCED, SHOW DIVORCE)				ADDRESS				CITY STATE			
LIABILITY				INSURANCE COMPANY NAME				POLICY NUMBER				VEHICLE DAMAGE RATING			
1-YES															
2-NO															
DAMAGE TO PROPERTY OTHER THAN VEHICLES				DAMAGE ESTIMATE				DAMAGE ESTIMATE							
3 feet guard rail & 2 feet fence rail				Highway det. 2 cook				embankment							
1-1 DAYLIGHT				1-CLEAR/CLOUDY				1-DRY				1-BLACKTOP			
2-DARK-NOT LIGHTED				2-RAINING				2-WET				2-CONCRETE			
3-DARK-LIGHTED				3-SNOWING				3-MUDDY				3-GRAVEL			
4-DARK-LIGHTED				4-FOG				4-SNOWY/ICY				4-SMELL			
5-DUSK				5-BLOWING DUST				5-OTHER				5-DIRT			
6-SMOKE				7-BLEETING				6-OTHER				6-OTHER			
8-HIGH WINDS				9-OTHER											
IN YOUR OPINION, DID THIS ACCIDENT RESULT IN AT LEAST \$500.00 DAMAGE TO ANY ONE PERSON'S PROPERTY?				YES NO				YES NO							
CHARGES FILED				CHARGE				CITATION NUMBER							
NAME															
NAME															
TIME NOTIFIED OF ACCIDENT				DATE				TIME ARRIVED AT SCENE OF ACCIDENT							
TYPED OR PRINTED NAME OF INVESTIGATION				DATE REPORT MADE				IS REPORT COMPLETE							
SIGNATURE OF INVESTIGATION				NO.				DEPARTMENT				DIST./AREA			

[illegible][illegible][illegible]

DISPOSITION OF KILLED AND INJURED		IF AMBULANCE USED, SHOW			
ITEM NUMBER	TAKEN TO	BY	TIME NOTIFIED	TIME ARRIVED AT SCENE	NO. ATTENDANTS INC. DRIVER
1	HOSPITAL	EMS	15:55	16:15	3

[illegible]

INVESTIGATOR'S NARRATIVE OPINION OF WHAT HAPPENED (ATTACH ADDITIONAL SHEETS IF NECESSARY)

Unit #1 was traveling SB on [redacted] attempting to exit onto [redacted] ramp when she lost control of her vehicle hitting guard rail on her left and to her right before vehicle stopped.

DIAGRAM ☐ ONE WAY ☐ TWO WAY ☐ DIVIDED

① INDICATE NORTH

guardrail

Exit to ramp

FACTORS AND CONDITIONS LISTED ARE THE INVESTIGATOR'S OPINION				OTHER FACTORS/CONDITIONS MAY OR MAY NOT HAVE CONTRIBUTED				TRAFFIC CONTROL				NO-NO PASSING CONC		TT-OTHER CONTROL					
FACTORS/CONDITIONS CONTRIBUTING								0-NO CONTROL OR IMPROPER 1-OFFICER ON FLASHING 2-100 YARD AWAY SIGNAL 3-STOP SIGN 4-FLASHING RED LIGHT				5-SLOW DOWN 6-WARNING SIGN 7-NO SIGN ON SIGNAL 8-YIELD SIGN 9-CEP/ET DRIVE ON DRIVE						<div style="border: 1px solid black; padding: 2px; display: inline-block;">D</div>	
UNIT 1	1	2	3	UNIT 1	1	2	3	UNIT 1	1	2	3	UNIT 1	1	2	3	UNIT 1	1	2	3
UNIT 2	1	2	3	UNIT 2	1	2	3	UNIT 2	1	2	3	UNIT 2	1	2	3	UNIT 2	1	2	3

- 1 KATHEN MY HEAD - DOMESTIC
 2 ANIMAL MY HEAD - WE
 3 THE END WITHOUT SATE
 4 CHAIRS AND WHEELS MY GAST
 5 DEFECTIVE MY HEADLIGHTS
 6 DEFECTIVE MY HEADLIGHTS
 7 DEFECTIVE MY TAIL LAMPS
 8 DEFECTIVE MY TAIL LAMPS
 9 DEFECTIVE MY TAIL LAMPS
 10 DEFECTIVE MY TAIL LAMPS
 11 DEFECTIVE MY TAIL LAMPS
 12 DEFECTIVE MY TAIL LAMPS
 13 DEFECTIVE MY TAIL LAMPS
 14 DEFECTIVE MY TAIL LAMPS
 15 DEFECTIVE MY TAIL LAMPS
 16 DEFECTIVE MY TAIL LAMPS
 17 DEFECTIVE MY TAIL LAMPS
 18 DEFECTIVE MY TAIL LAMPS
 19 DEFECTIVE MY TAIL LAMPS
 20 DEFECTIVE MY TAIL LAMPS

- 40 DISAGREEMENT IN VEHICLE
 50 DRIVER WAS FEMALE
 60 DROVE WITHOUT NEARLIGHTS
 70 FAILED TO CONTROL SPEED 1
 80 FAILED TO DRIVE ON SINGLE LANE
 90 FAILED TO DRIVE ON SHOULDER
 00 FAILED TO USE ANY WARNING SIGN
 10 FAILED TO PASS TO LEFT SAFELY
 20 FAILED TO PASS TO RIGHT SAFELY
 30 FAILED TO SIGNAL OR GIVE WARNING SIGNAL
 40 FAILED TO STOP AT PROPER PLACE
 50 FAILED TO STOP FROM SIGNAL OR SIGN
 60 FAILED TO STOP FOR Train
 70 FAILED TO YIELD ROW - EMERGENCY VEHICLE
 80 FAILED TO YIELD ROW - UPPER NEARLIGHTS
 90 FAILED TO YIELD ROW - TRUCKS AND
 00 FAILED TO YIELD ROW - STOP SIGN
 10 FAILED TO YIELD ROW - STOP SIGN

- 37 FILES TO TO TALK NOW - TURNING LEFT
38 FILES TO TALK NOW - TURN ON RO
39 FILES TO TALK NOW - TALK NOW
40 TURNED ON TALK
41 FAMILY BUSINESS SYSTEM
42 FINE IN VEHICLE
43 FLEETING ON SYMBIONE POLICE
44 FOLLOWED YOU CLOSELY
45 WAS BEEN INJURED
46 HAD BEEN INJURED BY A MAN IN A HARBOR
47 HAD BEEN IN A HARBOR
48 HAD BEEN IN A HARBOR
49 HAD BEEN IN A HARBOR
50 HAD BEEN IN A HARBOR
51 HAD BEEN IN A HARBOR
52 HAD BEEN IN A HARBOR
53 HAD BEEN IN A HARBOR
54 HAD BEEN IN A HARBOR
55 HAD BEEN IN A HARBOR

- 34 POWERED WITHOUT LIGHTS
 37 PASSED IN AND PASTING ZONE
 40 PASSES IN FRONT SHOULDER
 43 PEDESTRIAN PAUSED TO TALK HOW TO GO OFF
 46 STOPPING - (WASNT HARMER LIGHT)
 49 STOPPING - BUT LIGHT
 52 TURNED ASSOCIATION PLAYS AN IN BARRIERS
 55 TURNED IMMEDIATELY - CUT CHARMER ON LEFT
 58 TURNED IMMEDIATELY - WENT AHEAD
 61 TURNED IMMEDIATELY - WENT AHEAD
 64 TURNED WHEN NEEDED
 67 WENT OFFSIDE - ALLISON
 70 WENT OFFSIDE - BUT
 73 WENT OFF - OFFSIDE ON IN INTERSECTION
 76 WENT OFF - BUT PASSING
 79 WENT OFF - ONE WAY ROAD
 82 STOP & PASTOR WENT ON IN ONE LINE

ACCIDENT COLLISION MEASUREMENT TABLE



U.S. Department of Transportation
National Highway Traffic Safety
Administration

ACCIDENT COLLISION MEASUREMENT TABLE

BEST AVAILABLE

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

Primary Sampling Unit Number 10

Case Number - Stratum 9615

ACCIDENT COLLISION DIAGRAM

Document the physical plant:

- all road/roadway delineation (e.g., curbs/edge lines, lane markings, median markings, pavement markings, parked vehicles, poles, signs, etc.)
- all traffic controls (e.g., signs/signals, etc.)
- north arrow placed on diagram
- roadway surface type and condition of applicable roadways
- grade measurements for all applicable roadways and at location of rollover initiation
- roadway curvature (include measurement of precrash superelevation for each vehicle if applicable)

Document vehicle dynamics including:

- reference point and reference line relative to physical features present at the scene
- scaled documentation of all accident induced physical evidence
- scaled documentation of all roadside objects contacted
- scaled representations of the vehicle(s) at pre-impact, impact, and final rest based upon either:
 - a) physical evidence, or
 - b) reconstructed accident dynamics

CRASH DATA

	VEH. #1	VEH. #2	VEH. #3
Heading Angle	<u>134</u>		
Surface Type	<u>CONCRETE</u>		
Surface Condition	<u>WET</u>		
Coefficient of Friction	<u>.60</u>		
Grade (v/h) Measurement (between impact and final rest)	<u>4%</u>		
Grade (v/h) Measurement (at location of rollover initiation)			
Grade (v/h) Measurement (at pre-crash location)			

Reference Point: TIP of cushion
BARRIER

Reference line: _____

Item	Distance and Direction from Reference Point	Distance and Direction from Reference Line
1 ST IMPACT		
1 ST POSSIBLE MARK (L) RAIL	0 - 13.1 N	
2 ND POSSIBLE MARK (L) RAIL	4.6 13 S	
2 ND IMPACT		
(R) SIDE RAIL (2' High)	19 - 26 S	
HDG CURVE leading into OFF RAMP	175	
ROAD HDG @ IMPACT	135	

Item	Distance and Direction from Reference Point	Distance and Direction from Reference Line
off ramp 4.0 ↓ slope		
GUARDRAIL 61 cm (24") High		

NASS CDS ACCIDENT FORM



ACCIDENT FORM

1. Primary Sampling Unit Number

10

2. Case Number - Stratum

9615

IDENTIFICATION

3. Number of General Vehicle
Forms Submitted

01

4. Date of Accident
(Month,Day,Year)

196

5. Time of Accident

1515

Code reported military time of accident.

NOTE: Midnight = 2400

Unknown = 9999

SPECIAL STUDIES - INDICATORS

Check (✓) each special study (SS15-SS18 below) that has been completed; code 1 for the checked special studies and 0 for the special studies not checked.

6. SS15 Administrative Use 0

7. SS16 Pedestrian Crash Data Study 0

(Data for this special study available
in a separate file.)

8. SS17 Impact Fires 0

9. SS18 Unsafe Driver Actions 0

10. SS19 Run Off Road 0

NUMBER OF EVENTS

11. Number of Recorded Events
in This Accident

02

Code the number of events which occurred
in this accident.

ACCIDENT EVENTS

For each event that occurred in the accident, code the lowest numbered vehicle in the left columns and the other involved vehicle or object in the right columns.

Accident Event Sequence Number	Vehicle Number	Class Of Vehicle	General Area of Damage	Vehicle Number or Object Contacted	Class Of Vehicle	General Area of Damage
12. <u>01</u>	13. <u>01</u>	14. <u>04</u>	15. <u>F</u>	16. <u>64</u>	17. <u>00</u>	18. <u>0</u>
19. <u>02</u>	20. <u>01</u>	21. <u>04</u>	22. <u>F</u>	23. <u>64</u>	24. <u>00</u>	25. <u>0</u>
26. <u>03</u>	27. _____	28. _____	29. _____	30. _____	31. _____	32. _____
33. <u>04</u>	34. _____	35. _____	36. _____	37. _____	38. _____	39. _____
40. <u>05</u>	41. _____	42. _____	43. _____	44. _____	45. _____	46. _____

IF GREATER THAN FIVE EVENTS, CONTINUE CODING ON THE ACCIDENT EVENT SUPPLEMENT

CODES FOR CLASS OF VEHICLE

- CV: 112.2 ⇒ 285.0
- | | |
|--|--|
| (00) Not a motor vehicle | (31) Large pickup truck (≤ 4,536 kgs GVWR) |
| (01) Subcompact/mini (wheelbase < 254 cm) | (38) Other pickup truck (≤ 4,536 kgs GVWR) |
| (02) Compact (wheelbase ≥ 254 but < 265 cm) | (39) Unknown pickup truck type (≤ 4,536 kgs GVWR) |
| (03) Intermediate (wheelbase ≥ 265 but < 278 cm) | (45) Other light truck (≤ 4,536 kgs GVWR) |
| (04) Full size (wheelbase ≥ 278 but < 291 cm) ← | (48) Unknown light truck type (≤ 4,536 kgs GVWR) |
| (05) Largest (wheelbase ≥ 291 cm) | (49) Unknown light vehicle type |
| (09) Unknown passenger car size | (50) School bus (excludes van based)(> 4,536 kgs GVWR) |
| (14) Compact utility vehicle | (58) Other bus (> 4,536 kgs GVWR) |
| (15) Large utility vehicle (≤ 4,536 kgs GVWR) | (59) Unknown bus type |
| (16) Utility station wagon (≤ 4,536 kgs GVWR) | (60) Truck (> 4,536 kgs GVWR) |
| (19) Unknown utility type | (67) Tractor without trailer |
| (20) Minivan (≤ 4,536 kgs GVWR) | (68) Tractor-trailer(s) |
| (21) Large van (≤ 4,536 kgs GVWR) | (78) Unknown medium/heavy truck type |
| (24) Van Based school bus (≤ 4,536 kgs GVWR) | (79) Unknown light/medium/heavy truck type |
| (28) Other van type (≤ 4,536 kgs GVWR) | (80) Motored cycle |
| (29) Unknown van type (≤ 4,536 kgs GVWR) | (90) Other vehicle |
| (30) Compact pickup truck (≤ 4,536 kgs GVWR) | (99) Unknown |

CODES FOR GENERAL AREA OF DAMAGE (GAD)

CDS APPLICABLE AND OTHER VEHICLES	(O) Not a motor vehicle	(R) Right side	(T) Top
	(N) Noncollision	(L) Left side	(U) Undercarriage
	(F) Front	(B) Back	(9) Unknown
TDC APPLICABLE VEHICLES	(O) Not a motor vehicle	(L) Left side	(C) Rear of cab
	(N) Noncollision	(B) Back of unit with cargo area (rear of trailer or straight truck)	(V) Front of cargo area
	(F) Front	(D) Back (rear of tractor)	(T) Top
	(R) Right side		(U) Undercarriage
			(9) Unknown

CODES FOR VEHICLE NUMBER OR OBJECT CONTACTED

(01-30) — Vehicle Number

Noncollision

- (31) Overturn — rollover (excludes end-over-end)
- (32) Rollover — end-over-end
- (33) Fire or explosion
- (34) Jackknife
- (35) Other intraunit damage (specify): _____

(36) Noncollision injury

(38) Other noncollision (specify): _____

(39) Noncollision — details unknown

Collision With Fixed Object

- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment
- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)

(54) Concrete traffic barrier

(55) Impact attenuator

(56) Other traffic barrier (includes guardrail) (specify): _____

(57) Fence

(58) Wall

(59) Building

(60) Ditch or culvert

(61) Ground

(62) Fire hydrant

(63) Curb

(64) Bridge

(68) Other fixed object (specify): _____

(69) Unknown fixed object

Collision with Nonfixed Object

(70) Passenger car, light truck, van, or other vehicle not in-transport

(71) Medium/heavy truck or bus not in-transport

(72) Pedestrian

(73) Cyclist or cycle

(74) Other nonmotorist or conveyance

(75) Vehicle occupant

(76) Animal

(77) Train

(78) Trailer, disconnected in transport

(79) Object fell from vehicle in-transport

(88) Other nonfixed object (specify): _____

(89) Unknown nonfixed object

(98) Other event (specify): _____

(99) Unknown event or object

NASS CDS VEHICLE FORMS: CASE VEHICLE



GENERAL VEHICLE FORM

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 9615
3. Vehicle Number 01

VEHICLE IDENTIFICATION

4. Vehicle Model Year 92
Code the last two digits of the model year
(99) Unknown
5. Vehicle Make (specify): MAZDA 41
Applicable codes are found in your
NASS Data Collection, Coding and
Editing Manual.
(99) Unknown
6. Vehicle Model (specify): 929 043
Applicable codes are found in your
NASS Data Collection, Coding and
Editing Manual.
(999) Unknown
7. Body Type 04
Note: Applicable codes may be found on
the back of this page.
8. Vehicle Identification Number
JM1HD4617N0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Left justify; Slash zeros and letter Z (0 and Z)
No VIN—Code all zeros
Unknown—Code all nines
9. Vehicle Special Use (This Trip) 0
(0) No special use
(1) Taxi
(2) Vehicle used as school bus
(3) Vehicle used as other bus
(4) Military
(5) Police
(6) Ambulance
(7) Fire truck or car
(8) Other (specify):
(9) Unknown

OFFICIAL RECORDS

10. Police Reported Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown
11. Police Reported Travel Speed 999
Code to the nearest kmph (NOTE: 000 means
less than 0.5 kmph)
(160) 159.5 kmph and above
(999) Unknown

____ mph X 1.6093 = ____ kmph

12. Speed Limit 056
(000) No statutory limit
Code posted or statutory speed limit in kmph
(999) Unknown
35 mph X 1.6093 = 56 kmph
13. Police Reported Alcohol Presence For Driver 0
(0) No alcohol present
(1) Yes alcohol present
(7) Not reported
(8) No driver present
(9) Unknown
14. Alcohol Test Result For Driver 96
Code actual value (decimal implied
before first digit—0.xx)
(95) Test refused
(96) None given
(97) AC test performed, results unknown
(98) No driver present
(99) Unknown
Source: _____
15. Police Reported Other Drug Presence For Driver 0
(0) No other drug(s) present
(1) Yes other drug(s) present
(7) Not reported
(8) No driver present
(9) Unknown
16. Other Drug Specimen Test Result For Driver 0
(0) No specimen test given
(1) Drug(s) not found in specimen
(2) Drug(s) found in specimen, (specify):
(3) Specimen test given, results unknown or not
obtained
(8) No driver present
(9) Unknown if specimen test given
17. Driver's Zip Code _____
(00001) Driver not a resident of U.S. or territories
Code actual 5-digit zip code
(99998) No driver present
(99999) Unknown
18. Driver's Race/Ethnic Origin 2
(1) White (non-Hispanic)
(2) Black (non-Hispanic)
(3) White (Hispanic)
(4) Black (Hispanic)
(5) American Indian, Eskimo or Aleut
(6) Asian or Pacific Islander
(7) Other (specify):
(8) No driver present
(9) Unknown

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (07) Hatchback, number of doors unknown
- (08) Other automobile type (specify): _____
- (09) Unknown automobile type

Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
- (11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
- (12) Large limousine - more than four side doors or stretched chassis
- (13) Three-wheel automobile or automobile derivative

Utility Vehicles ($\leq 4,536$ kgs GVWR)

- (14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [76 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Passport, Samurai, Sidekick, Rocky)
- (15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Hummer, Landcruiser, Rover, Scout, Yukon)
- (16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
- (19) Utility, unknown body type

Van Based Light Trucks ($\leq 4,536$ kgs GVWR)

- (20) Minivan (Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Vista, Aerostar, Windstar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Expo Wagon, Vanagon/Camper.)
- (21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
- (22) Step van or walk-in van ($\leq 4,536$ kgs GVWR)
- (23) Van based motorhome ($\leq 4,536$ kgs GVWR)
- (24) Van based school bus ($\leq 4,536$ kgs GVWR)
- (25) Van based other bus ($\leq 4,536$ kgs GVWR)
- (28) Other van type (Hi-Cube Van, Kary) (specify): _____
- (29) Unknown van type

Light Conventional Trucks (Pickup style cab, $\leq 4,536$ kgs GVWR)

- (30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10, T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
- (31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500, T100)
- (32) Pickup with slide-in camper
- (33) Convertible pickup
- (39) Unknown pickup style light conventional truck type

Other Light Trucks ($\leq 4,536$ kgs GVWR)

- (40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (45) Other light conventional truck type
- (48) Unknown light truck type
- (49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): _____
- (59) Unknown bus type

Medium/Heavy Trucks ($> 4,536$ kgs GVWR)

- (60) Step van ($> 4,536$ kgs GVWR)
- (61) Single unit straight truck ($4,536$ kgs $<$ GVWR $\leq 8,845$ kgs)
- (62) Single unit straight truck ($8,845$ kgs $<$ GVWR $\leq 11,793$ kgs)
- (63) Single unit straight truck ($> 11,793$ kgs GVWR)
- (64) Single unit straight truck, GVWR unknown
- (65) Medium/heavy truck based motorhome
- (67) Truck-tractor with no cargo trailer
- (68) Truck-tractor pulling one trailer
- (69) Truck-tractor pulling two or more trailers
- (70) Truck-tractor (unknown if pulling trailer)
- (78) Unknown medium/heavy truck type
- (79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (80) Motorcycle
- (81) Moped (motorized bicycle)
- (82) Three-wheel motorcycle or moped
- (88) Other motored cycle (minibike, motorscooter) (specify): _____
- (89) Unknown motored cycle type

Other Vehicles

- (90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (91) Snowmobile
- (92) Farm equipment other than trucks
- (93) Construction equipment other than trucks
- (97) Other vehicle type
- (99) Unknown body type

PRECRASH ENVIRONMENTAL DATA

19. Relation To Interchange Or Junction 1
 (0) Non-interchange area and non-junction
 (1) Interchange area related

Non-Interchange junctions

- (2) Intersection related
 (3) Driveway, alley access related
 (4) Other junction (specify) _____

(5) Unknown type of junction _____

(9) Unknown

20. Trafficway Flow 3
 (0) Not physically divided (two way traffic)
 (1) Divided trafficway-median strip without positive barrier
 (2) Divided trafficway-median strip with positive barrier
 (3) One way traffic *RAMP*
 (9) Unknown

21. Number Of Travel Lanes 1
 (1) One
 (2) Two
 (3) Three
 (4) Four
 (5) Five
 (6) Six
 (7) Seven or more
 (9) Unknown

22. Roadway Alignment 3
 (1) Straight
 (2) Curve right
 (3) Curve left
 (9) Unknown

23. Roadway Profile 4
 (1) Level
 (2) Uphill grade (>2%) *4%*
 (3) Hill crest
 (4) Downhill grade (>2%)
 (5) Sag
 (9) Unknown

24. Roadway Surface Type 1
 (1) Concrete
 (2) Bituminous (asphalt)
 (3) Brick or block
 (4) Slag, gravel, or stone
 (5) Dirt
 (8) Other (specify): _____
 (9) Unknown

25. Roadway Surface Condition 2

- (1) Dry
 (2) Wet
 (3) Snow or slush
 (4) Ice
 (5) Sand, dirt, or oil
 (8) Other (specify): _____
 (9) Unknown

26. Light Conditions 1

- (1) Daylight
 (2) Dark
 (3) Dark, but lighted
 (4) Dawn
 (5) Dusk
 (9) Unknown

27. Atmospheric Conditions 1

- (0) No adverse atmospheric-related driving conditions
 (1) Rain *PER DRIVER*
 (2) Sleet/hail
 (3) Snow
 (4) Fog
 (5) Rain and fog
 (6) Sleet and fog
 (7) Other (e.g., smog, smoke, blowing sand or dust, etc.) (specify): _____
 (9) Unknown

28. Traffic Control Device 8

- (0) No traffic control(s)
 (1) Traffic control signal (not RR crossing)

Regulatory

- (2) Stop sign
 (3) Yield sign
 (4) School zone sign
 (5) Other regulatory sign (specify): _____

- (6) Warning sign (not RR crossing)

- (7) Unknown sign

- (8) Miscellaneous/other controls including RR controls (specify): *Road Maintenance warning*

- (9) Unknown

29. Traffic Control Device Functioning 2

- (0) No traffic control device

- (1) Traffic control device not functioning (specify): _____

- (2) Traffic control device functioning properly

- (9) Unknown

PRECRASH DRIVER RELATED DATA

30. Driver's Distraction/Inattention To Driving (Prior To Recognition Of Critical Event) 01
- (00) No driver present
 (01) Attentive or not distracted
 (02) Looked but did not see
- Distractions*
 (03) By other occupant(s), (specify): _____
 (04) By moving object in vehicle (specify): _____
 (05) While talking or listening to cellular phone (specify location and type of phone): _____
 (06) While dialing cellular phone (specify location and type of phone): _____
 (07) While adjusting climate controls
 (08) While adjusting radio, cassette, CD (specify): _____
 (09) While using other device/controls integral to vehicle (specify): _____
 (10) While using or reaching for device/object brought into vehicle (specify): _____
 (11) Sleepy or fell asleep
 (12) Distracted by outside person, object, or event (specify): _____
 (13) Eating or drinking
 (14) Smoking related
 (97) Distracted/inattentive, details unknown
 (98) Other, distraction (specify): _____
 (99) Unknown
31. Pre-Event Movement (Prior to Recognition of Critical Event) 14
- (00) No driver present
 (01) Going straight
 (02) Decelerating in traffic lane
 (03) Accelerating in traffic lane
 (04) Starting in traffic lane
 (05) Stopped in traffic lane
 (06) Passing or overtaking another vehicle
 (07) Disabled or parked in travel lane
 (08) Leaving a parking position
 (09) Entering a parking position
 (10) Turning right
 (11) Turning left
 (12) Making a U-turn
 (13) Backing up (other than for parking position)
 (14) Negotiating a curve
 (15) Changing lanes
 (16) Merging
 (17) Successful avoidance maneuver to a previous critical event
 (97) Other (specify): _____
 (99) Unknown
32. Critical Precrash Event 06
- THIS VEHICLE LOSS OF CONTROL DUE TO:**
- (01) Blow out or flat tire
 (02) Stalled engine
 (03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
 (04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
 (05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
 (06) Traveling too fast for conditions
 (08) Other cause of control loss (specify): _____
 (09) Unknown cause of control loss

THIS VEHICLE TRAVELLING

- (10) Over the lane line on left side of travel lane
 (11) Over the lane line on right side of travel lane
 (12) Off the edge of the road on the left side
 (13) Off the edge of the road on the right side
 (14) End departure
 (15) Turning left at intersection
 (16) Turning right at intersection
 (17) Crossing over (passing through) intersection
 (18) This vehicle decelerating
 (19) Unknown travel direction

OTHER MOTOR VEHICLE IN LANE

- (50) Other vehicle stopped
 (51) Traveling in same direction with lower steady speed
 (52) Traveling in same direction while decelerating
 (53) Traveling in same direction with higher speed
 (54) Traveling in opposite direction
 (55) In crossover
 (56) Backing
 (59) Unknown travel direction of other motor vehicle in lane

OTHER MOTOR VEHICLE ENCROACHING INTO LANE

- (60) From adjacent lane (same direction)—over left lane line
 (61) From adjacent lane (same direction)—over right lane line
 (62) From opposite direction—over left lane line
 (63) From opposite direction—over right lane line
 (64) From parking lane
 (65) From crossing street, turning into same direction
 (66) From crossing street, across path
 (67) From crossing street, turning into opposite direction
 (68) From crossing street, intended path not known
 (70) From driveway, turning into same direction
 (71) From driveway, across path
 (72) From driveway, turning into opposite direction
 (73) From driveway, intended path not known
 (74) From entrance to limited access highway
 (78) Encroachment by other vehicle—details unknown

PEDESTRIAN, PEDALCYCLIST, OR OTHER NONMOTORIST

- (80) Pedestrian in roadway
 (81) Pedestrian approaching roadway
 (82) Pedestrian—unknown location
 (83) Pedalcyclist or other nonmotorist in roadway (specify): _____
 (84) Pedalcyclist or other nonmotorist approaching roadway, (specify): _____
 (85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

OBJECT OR ANIMAL

- (87) Animal in roadway
 (88) Animal approaching roadway
 (89) Animal—unknown location
 (90) Object in roadway
 (91) Object approaching roadway
 (92) Object—unknown location
 (98) Other critical precrash event (specify): _____
 (99) Unknown

33. Attempted Avoidance Maneuver 09

- (00) No driver present
- (01) No avoidance maneuver
- (02) Braking (no lockup)
- (03) Braking (lockup)
- (04) Braking (lockup unknown)
- (05) Releasing brakes
- (06) Steering left
- (07) Steering right
- (08) Braking and steering left
- (09) Braking and steering right
- (10) Accelerating
- (11) Accelerating and steering left
- (12) Accelerating and steering right
- (98) Other action (specify):

(99) Unknown

34. Pre-Impact Stability 2

- (0) No driver present
- (1) Tracking
- (2) Skidding longitudinally—rotation less than 30 degrees
- (3) Skidding laterally—clockwise rotation
- (4) Skidding laterally—counterclockwise rotation
- (7) Other vehicle loss-of-control (specify):

(9) Pre-crash stability unknown

35. Pre-Impact Location 4

- (0) No driver present
- (1) Stayed in original travel lane
- (2) Stayed on roadway but left original travel lane
- (3) Stayed on roadway, not known if left original travel lane
- (4) Departed roadway
- (5) Remained off roadway
- (6) Returned to roadway
- (7) Entered roadway
- (9) Unknown

36. Accident Type 07

(Note: Applicable codes on back of this page)

- (00) No impact
Code the number of the diagram that best describes the accident circumstance
- (98) Other accident type (specify):

(99) Unknown

STOP HERE IF GV07 DOES NOT EQUAL 01 - 49

Category	Configuration	ACCIDENT TYPES (Includes Intent)					
I Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN	
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN	
	C. Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 22 21 23 SLOWER 26, 26, 27	 24 25 26 27 28 DECEL. 29, 30, 31	 30 29 31 (EACH • 32) SPECIFICS OTHER	(EACH • 33) SPECIFICS UNKNOWN	
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	 40 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER	(EACH • 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle	 44 45	 46 45 47	(EACH • 48) SPECIFICS OTHER	(EACH • 49) SPECIFICS UNKNOWN		
III Same Trafficway Opposite Direction	G. Head-On	 50 51 LATERAL MOVE	(EACH • 52) SPECIFICS OTHER	(EACH • 53) SPECIFICS UNKNOWN			
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	 60 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER	(EACH • 63) SPECIFICS UNKNOWN
	I. Sideswipe Angle	 64 65 LATERAL MOVE	(EACH • 66) SPECIFICS OTHER	(EACH • 67) SPECIFICS UNKNOWN			
IV Change Trafficway Vehicle Turning	J. Turn Across Path	 68 69 INITIAL OPPOSITE DIRECTIONS	 71 70 INITIAL SAME DIRECTIONS	 73 72 (EACH • 74) SPECIFICS OTHER	(EACH • 75) SPECIFICS UNKNOWN		
	K. Turn Into Path	 76 77 TURN INTO SAME DIRECTION	 79 78 TURN INTO OPPOSITE DIRECTIONS	 81 80 82 83 (EACH • 84) SPECIFICS OTHER	(EACH • 85) SPECIFICS UNKNOWN		
V Intersecting Paths (Vehicle Damage)	L. Straight Paths	 86 87	 88 89	(EACH • 90) SPECIFICS OTHER	(EACH • 91) SPECIFICS UNKNOWN		
VI Miscellaneous	M. Backing Etc	 92 BACKING VEH.	 93 OTHER VEH. OR OBJECT	98 Other Accident Type 99 Unknown Accident Type 00 No Impact			

OCCUPANT RELATED

37. Driver Presence in Vehicle 1
 (0) Driver not present
 (1) Driver present
 (9) Unknown
38. Number of Occupants This Vehicle 01
 (00-96) Code actual number of occupants for this vehicle
 (97) 97 or more
 (99) Unknown
39. Number of Occupant Forms Submitted 01

AIR BAG RELATED

40. Is this an AOPS Vehicle? 1
 (0) No (includes unknown)
 (1) Yes - researcher determined
 (2) VIN determined air bag system
 (3) VIN determined automatic (passive) belts
 (4) VIN determined air bag and automatic (passive) belts
41. Air Bag(s) Deployment, First Seat Frontal 6
 (0) Not equipped or not available
 (1) No air bags deployed
Single Air Bag Vehicle
 (2) Driver air bag deployed
 (3) Driver air bag, unknown if deployed
Multiple Air Bag Vehicle
 (4) Driver side only deployed
 (5) Passenger side only deployed
 (6) Driver and passenger side deployed
 (7) Driver and passenger side unknown if deployed
 (8) Air bag(s) deployed, details unknown
 (9) Unknown
42. Air Bag(s) Deployment, Other Than First Seat Frontal 0
 (0) Not equipped with an "other" air bag
 (1) Deployed during accident (as a result of impact)
 (2) Deployed inadvertently just prior to accident
 (3) Deployed, details unknown
 (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
 (5) Unknown if deployed
 (7) Nondeployed
 (9) Unknown

Specify type of "other" air bag present: _____

VEHICLE WEIGHT ITEMS

43. Vehicle Curb Weight 1.630
 _____ Code weight to nearest 10 kilograms.
 (045) Less than 454 kilograms
 (612) 6,124 kilograms or more
 (999) Unknown
3,596 lbs X .4536 = 1,631.1 kgs

Source: _____

44. Vehicle Cargo Weight 0.000
 _____ Code weight to nearest 10 kilograms.
 (000) Less than 5 kilograms
 (454) 4,536 kilograms or more
 (999) Unknown

_____ lbs X .4536 = _____ kgs

Source: _____

ROLLOVER DATA

45. Rollover 00
 (00) No rollover (no overturning)
Rollover (primarily about the longitudinal axis)
 (01-16) Code the number of quarter turns
 (17) Rollover, 17 or more quarter turns (specify): _____
 (98) Rollover--end-over-end (i.e., primarily about the lateral axis)
 (99) Rollover (overturn), details unknown

46. Rollover Initiation Type 00
 (00) No rollover
 (01) Trip-over
 (02) Flip-over
 (03) Turn-over
 (04) Climb-over
 (05) Fall-over
 (06) Bounce-over
 (07) Collision with another vehicle
 (08) Other rollover initiation type specify: _____

(98) Rollover--end-over-end
(99) Unknown rollover initiation type

47. Location of Rollover Initiation 0
 (0) No rollover
 (1) On roadway
 (2) On shoulder--paved
 (3) On shoulder--unpaved
 (4) On roadside or divided trafficway median
 (8) Rollover--end-over-end
 (9) Unknown

48. Rollover Initiation Object Contacted 00
 (Note: Applicable codes on back of page)

49. Location on Vehicle Where Initial Principal Tripping Force Is Applied 0
 (0) No rollover
 (1) Wheels/tires
 (2) Side plane
 (3) End plane
 (4) Undercarriage
 (5) Other location on vehicle (specify): _____

(6) Non-contact rollover forces (specify): _____

(8) Rollover--end-over-end
(9) Unknown

50. Direction of Initial Roll 0
 (0) No rollover
 (1) Roll right - primarily about the longitudinal axis
 (2) Roll left - primarily about the longitudinal axis
 (8) Rollover--end-over-end
 (9) Unknown roll direction

VERRIDE/UNDERRIDE (THIS VEHICLE)

51. Front Override/Underride (this Vehicle) 0
52. Rear Override/Underride (this Vehicle) 0
- (0) No override/underride, or not an end-to-end impact between two CDS applicable vehicles, and no medium/heavy truck or bus underride

*Override (see specific CDC)**[Between 2 CDS applicable vehicles (Bodytype, GV07 = 1-49)]*

- (1) 1st CDC
- (2) 2nd CDC
- (3) Other not automated CDC (specify): _____

*Underride (see specific CDC)**[Between 2 CDS applicable vehicles (Bodytype, GV07 = 1-49)]*

- (4) 1st CDC
- (5) 2nd CDC
- (6) Other not automated CDC (specify): _____

- (7) Medium/heavy truck or bus override (of any configuration)
- (9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value

- (996) Non-horizontal impact
- (997) Noncollision
- (998) Impact with object
- (999) Unknown

53. Heading Angle For This Vehicle 998
54. Heading Angle For Other Vehicle 998

RECONSTRUCTION DATA

55. Towed Trailing Unit 0
- (0) No towed unit
- (1) Yes—towed trailing unit
- (9) Unknown
56. Documentation of Trajectory Data for This Vehicle 0
- (0) No
- (1) Yes
57. Post Collision Condition of Tree or Pole (For Highest Delta V) 0
- (0) Not collision (for highest delta V) with tree or pole
- (1) Not damaged
- (2) Cracked/sheared
- (3) Tilted < 45 degrees
- (4) Tilted ≥ 45 degrees
- (5) Uprooted tree
- (6) Separated pole from base
- (7) Pole replaced
- (8) Other (specify): _____
- (9) Unknown

ACCIDENT RECONSTRUCTION PROGRAMS HIGHEST DELTA V

58. Basis for Total (Resultant) Delta V (highest) 01

(00) No vehicle inspection

Delta V Calculated

- (01) Reconstruction program—damage only routine
- (02) Reconstruction program—damage and trajectory routine
- (03) Missing vehicle algorithm

Delta V Not Calculated

- (04) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.

All vehicles within scope (CDC applicable) of reconstruction program but one of the collision conditions is beyond the scope of the reconstruction program or other acceptable reconstruction technique, regardless of adequacy of damage data.

- (05) Rollover
- (06) Other non-horizontal forces
- (07) Sideswipe type damage
- (08) Severe override
- (09) Yielding object
- (10) Overlapping damage
- (11) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available, (specify): _____

(98) Other, (specify): _____

COMPUTER GENERATED CRASH SEVERITY

59. Total Delta V

Highest

01514.6 Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)
(160) 159.5 kmph and above
(999) Unknown

60. Longitudinal Component of Delta V

Highest

+0013-12.6 Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: _000 means greater than
-0.5 kmph and less than +0.5 kmph)
(±160) ±159.5 kmph and above
(_999) Unknown

61. Lateral Component of Delta V

Highest

+0007-7.3 Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: _000 means greater than -0.5 kmph and
less than +0.5 kmph)
(±160) ±159.5 kmph and above
(_999) Unknown

62. Energy Absorption

Highest

027.50027,498 Nearest 100 joules (highest)

_____ Nearest 100 joules (secondary)

(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

63. Impact Speed

Highest

998

_____ Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: 000 means
less than 0.5 kmph)
(160) 159.5 kmph and above
(998) Trajectory algorithm not run
(999) Unknown

DELTA V CONFIDENCE LEVEL

64. Confidence In Reconstruction Program Results (For Highest Delta V)

1

- (0) No reconstruction
(1) Collision fits model — results appear reasonable
(2) Collision fits model — results appear high
(3) Collision fits model — results appear low
(4) Borderline reconstruction — results appear reasonable

OTHER SPEED ESTIMATE

65. Barrier Equivalent Speed

Highest

01514.6 Nearest kmph (highest)

_____ Nearest kmph (secondary)

(NOTE: 000 means
less than 0.5 kmph)
(160) 159.5 kmph and above
(999) Unknown

ESTIMATED DELTA V	INSPECTION TYPE
66. Estimated Highest Delta V (Researcher Determined) <u>0</u> (0) Reconstruction Delta V coded <i>Estimated Delta V</i> (1) Less than 10 kmph (2) ≥ 10 kmph but < 25 kmph (3) ≥ 25 kmph but < 40 kmph (4) ≥ 40 kmph but < 55 kmph (5) ≥ 55 kmph <i>Other estimates of damage severity</i> (6) Minor (7) Moderate (8) Severe (9) Unknown	67. Type of Vehicle Inspection <u>3</u> (0) No inspection (1) Vehicle fully repaired-no damage evident (2) Partial inspection (specify): _____ (3) Complete inspection DELTA V EVENT NUMBER 68. Delta V Event Number <u>1</u> _____ Code the accident event sequence number that resulted in the Delta V that has been coded above for this vehicle (99) Unknown
<p>*** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV67 = 0), ***</p> <p>DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS</p> <p>*** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE ***</p> <p>THE EXTERIOR VEHICLE, INTERIOR VEHICLE, OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.</p>	



EXTERIOR VEHICLE FORM

1. Primary Sampling Unit Number	<u>10</u>	3. Vehicle Number	<u>01</u>
2. Case Number - Stratum	<u>9615</u>		

VEHICLE IDENTIFICATION

VIN	<u>JM1HD4617N0</u>	Model Year	<u>92</u>
Vehicle Make (specify):	<u>MAZDA</u>	Vehicle Model (specify):	<u>929</u>

LOCATOR

Locate the end of the damage with respect to the vehicle's damaged center point or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L	Location of Max Crush
01	② BC OVER 60 CM	ACROSS front Bumper	C-1
02	③ BC UNK CORNER	IMPACT - PARTIALLY	OVERLAPPING

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

Specific Impact Number	Plane of Impact C-Measurements	Direct Damage		Field L	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	±D
		Width (CDC)	Max Crush								
01	Front Bumper	60		131	40	34	26	15	11	12	
01	FREESPACE				20	15	12	2	5	15	
01	FINAL ADJ.				20	19	14	13	6	0	-41
02	Front Bumper ③ Bumper CORNER										-OVERLAPPING DAMAGE

ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase 112.2 inches x 2.54 = 285.0 cm
 Overall Length 193.7 inches x 2.54 = 492.0 cm
 Maximum Width 70.7 inches x 2.54 = 179.6 cm
 Curb Weight 3,596 pounds x 0.4536 = 1,631.1 kg
 Average Track ^{59.4}_{59.8} 59.6 inches x 2.54 = 151.4 cm
 Front Overhang 34.3 inches x 2.54 = 87 cm
 Rear Overhang 47.2 inches x 2.54 = 120 cm
 Undeformed End Width 55.9 inches x 2.54 = 142 cm
 Engine Size: cyl/disl. 5 passenger V-6 180.3 CID x 0.001 = 3.0 L
 x 0.0164 = 3.0 L

Shipping Weight 3596 6-passenger
 Curb Weight 3,696 5-passenger

3,596

SPECIAL CRASH INVESTIGATION ADDENDUM

Submodel Designation: {specify} None Color: {specify} White Repair Cost: \$ Totalled

Transmission: {circle} Automatic | Manual Speed: 3-speed | 4-speed | 5-speed | Other:

Steering: {circle} Power-assisted | Manual Type: rack-and-pinion | worm-and-gear | Other
{please describe}:

Brakes: {circle} Power-assisted | Manual Type: 4-wheel disc | 4-wheel drum | 4-wheel hydraulic
| front disc, rear drum | Other:

Observed Defects: {specify}

Fleet Type: {circle} Private vehicle | Rental vehicle | Leased vehicle | Commercial vehicle | Other
{please describe}:

VEHICLE DAMAGE SKETCH

TIRE—WHEEL DAMAGE
a. Rotation physically restricted b. Tire deflated
 RF 1
 LF 2
 RR 2
 LR 2

 RF 2
 LF 2
 RR 2
 LR 2

(1) Yes (2) No (8) NA (9) Unk.

TYPE OF TRANSMISSION

☐ Manual ☒ Automatic

ORIGINAL SPECIFICATIONS

 Wheelbase 285 cm
 Overall Length 492 cm
 Maximum Width 180 cm
 Curb Weight 1631 kg
 Average Track 151 cm
 Front Overhang 87 cm
 Rear Overhang 120 cm
 Undeformed End Width 142 cm
 Engine Size: cyl./displ. V6 3.0 L
WHEEL STEER ANGLES
(For locked front wheels or displaced rear axles only)
 RF ± _____ °
 LF ± _____ °
 RR ± _____ °
 LR ± _____ °

Within ± 5 degrees

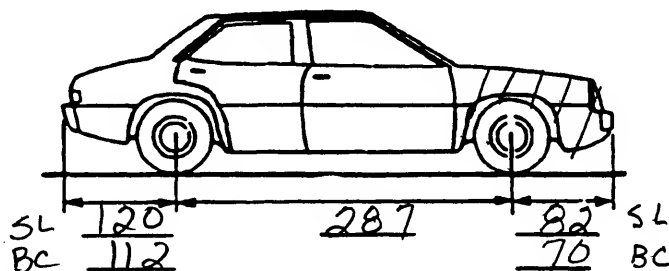
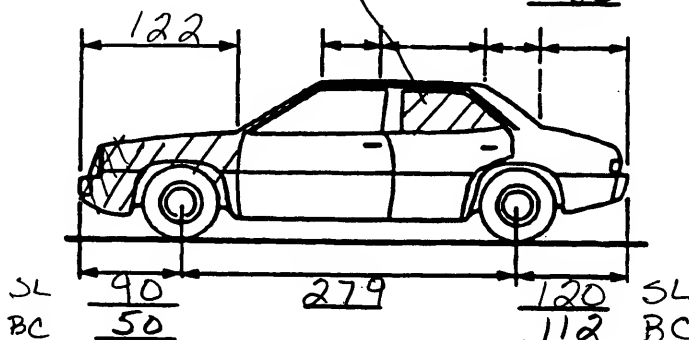
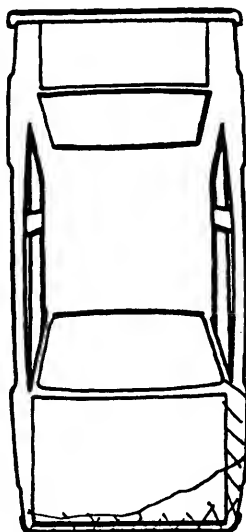
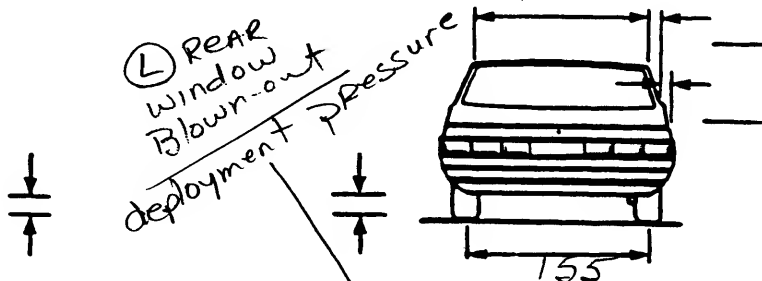
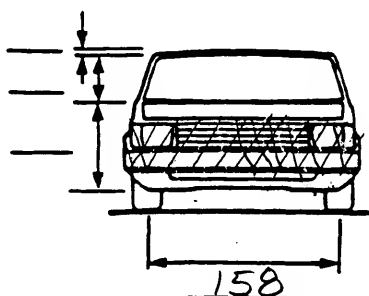
DRIVE WHEELS

☐ FWD ☒ RWD ☐ 4WD

Approximate Cargo Weight _____ kg

PARTIAL overlapping
Damage to front

MEASUREMENTS IN CENTIMETERS



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

BRANHAM AUTOMOBILE REFERENCE BOOK-FOREIGN CAR SECTION

LEXUS MOTOR CORP.,

Type of Body Pass. Cap.	Model	Wheel Base	Total Length	Shp. Wt.	Tax H.P.	P.O.E. West Coast	P.O.E. East Coast
Auto. Trans. 4-speed; w/Intelligence and w/CA. Emissions; EPA Mileage Estimate 18/23							
5-PS 4-door Luxury Sedan	9110	110.8"	196.7"	3759	37.87	46,600	46,600
Options Lexus LS400: (DC)Remote 6-CD Compact Disc Auto-Changer-\$900; (FT)All-Season Tires-N/C; (MO)Memory System-\$800; (NK)Lexus/Nakamichi Premium Sound System(requires DC)-\$1000; (SA)Electronic Air Suspension W/Lexus Ride Control (requires MO & SR)-\$1500; (SR)Power Tilt and Slide Moonroof with Sunshade-\$1000; (TN)Traction control System(TRAC) with Heated Front Seats(requires FT)-\$1700							
Options Port Installed (All Models): (CF)Carpeted Floor Mats (placed in trunk of vehicle)-\$115; (LM)Carpeted Trunk Mat (without CD)(Placed in Trunk of Vehicle)-\$68; (ML)Carpeted Trunk Mat (with CD)(placed in Trunk of Vehicle)-\$68; (WL)WheelLocks(Installed)-\$50							

MAZDA MOTORS OF AMERICA,

1992 MAZDA 323 4 cyl 1.6 liter, B6E Gas engine(16 valve)

Bore & Stroke 3.07"x3.29"; Tax H.P. 15.08; SAE H.P. 82@5000; Torque 92@2500; P.D. 97.5 cu.in., 1.6 liter

Man. Trans. 5-speed; EPA Mileage Estimate 29/37

4-PS 3-door Hatchback	323	96.5"	163.6"	2238	15.08	7,199	7,199
4-PS 3-door Hatchback	323SE	96.5"	163.6"	2238	15.08	8,699	8,699

Auto. Trans. 4-speed; EPA Mileage Estimate 26/33

1992 MAZDA PORTEGE DX 4 cyl 1.8 liter, BPE Gas Engine(16 valve)

Bore & Stroke 3.27"x3.35"; Tax H.P. 17.11; SAE H.P. 103@5500; Torque 111@4000; P.D. 112.5 cu.in., 1.8 liter

Man. Trans. 5-speed; EPA Mileage Estimate 28/36

5-PS 4-door Sedan	DX	98.4"	171.5"	2388	17.11	10,249	10,249
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Auto. Trans. 4-speed; EPA Mileage Estimate 24/31

1992 MAZDA PORTEGE LX 4 cyl 1.8 liter, BPD Gas Engine(16 valve)

Bore & Stroke 3.27"x3.35"; Tax H.P. 17.11; SAE H.P. 125@6500; Torque 114@4500; P.D. 112.5 cu.in., 1.8 liter

Man. Trans. 5-speed; EPA Mileage Estimate 25/30

5-PS 4-door Sedan	LX	98.4"	171.5"	2487	17.11	11,999	11,999
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Auto. Trans. 4-speed; EPA Mileage Estimate 24/29

1992 MAZDA 929 V6 cyl 3.0 liter, DOHC Gas Engine(24 valve)

Bore & Stroke 3.5"x3.0"; Tax H.P. 29.4; SAE H.P. 195@5750; Torque 200@3500; P.D. 180.3 cu.in., 3.0 liter

Auto. Trans. 4-speed; EPA Mileage Estimate 19/24

6-PS 4-door Luxury Sedan	929	112.2"	193.7"	3596	29.4	28,500	28,500
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1992 MAZDA MX3 4 cyl 1.6 liter B6E Gas Engine(16 valve)

Bore & Stroke 3.07"x3.29"; Tax H.P. 15.08; SAE H.P. 88@5000; Torque 98@4000; P.D. 98 cu.in., 1.6 liter

Man. Trans. 5-speed; EPA Mileage Estimate 29/35

4-PS 3-door Hatchback	MX3	96.3"	165.7"	2332	15.08	11,000	11,000
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Auto. Trans. 4-speed; EPA Mileage Estimate 25/32

1992 MAZDA MX-3 GS V6 cyl 1.8 liter K8D Gas Engine(24 valve)

Bore & Stroke 2.95"x2.74"; Tax H.P. 20.89; SAE H.P. 130@4500; Torque 115@4500; P.D. 113 cu.in., 1.8 liter

Man. Trans. 5-speed; EPA Mileage Estimate 23/28

4-PS 3-door Hatchback	GS	96.3"	165.7"	2541	20.89	13,800	13,800
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Auto. Trans. 4-speed; EPA Mileage Estimate 20/27

1992 MAZDA MX-5 MIATA 4 cyl 1.6 liter, DOHC B6-ZE Gas Engine(16 valve)

Bore & Stroke 3.1"x3.3"; Tax H.P. 15.38; SAE H.P. 116@6500; Torque 100@5500; P.D. 98 cu.in., 1.6 liter

Man. Trans. 5-speed; EPA Mileage Estimate 25/30

4-PS 2-door Convertible	YELLOW	89.2"	155.4"	2216	15.38	14,800	14,800
4-PS 2-door Convertible	BLACK	89.2"	155.4"	2216	15.38	17,050	17,050

Bore & Stroke 3.1"x3.3"; Tax H.P. 15.38; SAE H.P. 105@6000; Torque 100@4000; P.D. 98 cu.in., 1.6 liter

Auto. Trans. 4-speed; EPA Mileage Estimate 24/28

1992 MAZDA MPV 4 cyl 2.6 liter, G6 Gas Engine

Bore & Stroke 3.6"x3.9"; Tax H.P. 20.74; SAE H.P. 121@4600; Torque 149@3500; D.P. 159.1 cu.in., 2.6 liter

Auto. Trans. 4-speed; EPA Mileage Estimate 18/24 4WD 15/19

2-PS 4-door Van 2WD	G6	110.4"	175.8"	3295	20.74	14,120	14,120
5-PS 4-door Wagon/Van 2WD	G6	110.4"	175.8"	3515	20.74	16,290	16,290
7-PS 4-door Wagon 2WD	G6	110.4"	175.8"	3558	20.74	17,710	17,710

1992 MAZDA MPV V6 cyl 3.0 liter, JE Gas Engine(18 valve)

Bore & Stroke 3.5"x3.0"; Tax H.P. 29.4; SAE H.P. 155@5000; Torque 169@4000; P.D. 180.3 cu.in., 3.0 liter

Auto. Trans. 4-speed; EPA Mileage Estimate 17/22 4WD 15/19

7-PS 4-door Wagon 2WD	JE	110.4"	175.8"	3558	29.4"	18,490	18,490
7-PS 4-door Wagon 4WD	JE	110.4"	175.8"	4010	29.4"	21,360	21,360

1992 MAZDA NAVAJO V6 cyl 4.0 liter, Gas Engine

Bore & Stroke 3.95"x3.32"; Tax H.P. 37.45; SAE H.P. 155@4200; Torque 220@2400; P.D. 245 cu.in., 4.0 liter

CODES FOR OBJECT CONTACTED

(99) Unknown event or object

[illegible]

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>01</u>	5. <u>64</u>	6. <u>01</u>	7. <u>F</u>	8. <u>Y</u>	9. <u>E</u>	10. <u>W</u>	11. <u>01</u>

Second Highest Delta "V"

12. <u>02</u>	13. <u>64</u>	14. <u>01</u>	15. <u>F</u>	16. <u>R</u>	17. <u>E</u>	18. <u>E</u>	19. <u>01</u>
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CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

20. <u>L</u>	21. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	22. <u>±D</u>
<u>142</u>	<u>020</u>	<u>019</u>	<u>014</u>	<u>013</u>	<u>006</u>	<u>000</u>	<u>+0041</u>

Second Highest Delta "V"

23. <u>L</u>	24. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	25. <u>±D</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

26. Undeformed End Width
(Coded when highest severity impact is an end plane impact.) 142
 _____ Code to the nearest centimeter
 (250) 250 centimeters or more
 (998) No highest severity end plane impact
 (999) Unknown

27. Direct Damage Width
(For highest severity impact) 060
 _____ Code to the nearest centimeter
 (250) 250 centimeters or more
 (999) Unknown

28. Original Wheelbase 285
 _____ Code to the nearest centimeter
 (650) 650 centimeters or more
 (999) Unknown
112.2 inches X 2.54 = 285.0 centimeters

29. Original Average Track Width 151
 _____ Code to the nearest centimeter
 (185) 185 centimeters or more
 (999) Unknown
59.6 inches X 2.54 = 151.4 centimeters

<p>30. Are CDCs Documented but Not Coded on The Automated File? <u>0</u></p> <p>(0) No (1) Yes</p> <p>31. Researcher's Assessment of Vehicle Disposition <u>1</u></p> <p>(0) Not towed due to vehicle damage (1) Towed due to vehicle damage (9) Unknown</p> <p>32. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle? <u>0</u></p> <p>(0) No post manufacturer modifications (1) Yes - post manufacturer modifications (specify): _____ _____ _____ (Include photograph of CERTIFICATION PLACARD in case report) (9) Unknown if vehicle is modified</p>	<p style="text-align: center;">FUEL SYSTEM</p> <p>35. Location of Fuel Tank-1 Filler Cap <u>2</u></p> <p>36. Location of Fuel Tank-2 Filler Cap <u>0</u></p> <p>(0) No fuel tank (1) On back plane (2) Aft of center of the rear wheels (rear axle) on left side plane (3) Aft of center of the rear wheels (rear axle) on right side plane (4) Forward of center of the rear wheels (rear axle) on left side plane (5) Forward of center of the rear wheels (rear axle) on right side plane (6) Over the center of the rear wheels (rear axle) on left side plane (7) Over the center of the rear wheels (rear axle) on right side plane (8) Other (specify): _____ (9) Unknown</p> <p>37. Type of Fuel Tank-1 <u>1</u></p> <p>38. Type of Fuel Tank-2 <u>0</u></p> <p>(0) No fuel tank (electrical vehicle) (1) Metallic (2) Non-metallic (9) Unknown</p>
<p style="text-align: center;">FIRE OCCURRENCE</p> <p>33. Fire Occurrence <u>0</u></p> <p>(0) No fire</p> <p>Yes, fire occurred (1) Minor (2) Major (9) Unknown</p> <p>34. Origin of Fire <u>0</u></p> <p>(0) No fire (1) Vehicle exterior (front, side, back, top) (2) Exhaust system (3) Fuel tank (and other fuel retention system parts) (4) Engine compartment (5) Cargo/trunk compartment (6) Instrument panel (7) Passenger compartment area (8) Other location (specify): _____ (9) Unknown</p>	<p>39. Location of Fuel Tank-1 <u>7</u></p> <p>40. Location of Fuel Tank-2 <u>0</u></p> <p>(0) No fuel tank (1) Aft of center of the rear wheels (rear axle) centered (2) Aft of center of the rear wheels (rear axle) left side (3) Aft of center of the rear wheels (rear axle) right side (4) Forward of center of the rear wheels (rear axle) centered (5) Forward of center of the rear wheels (rear axle) left side (6) Forward of center of the rear wheels (rear axle) right side (7) Over center of the rear wheels (rear axle) (8) Other (specify): _____ (9) Unknown</p> <p>41. Damage to Fuel Tank-1 <u>1</u></p> <p>42. Damage to Fuel Tank-2 <u>0</u></p> <p>(0) No fuel tank (1) No damage to fuel tank (2) Deformed, no seam failure (3) Deformed, with a seam failure (4) Punctured (5) Lacerated (ripped) (6) Abraded (scraped) (7) Filler neck separation from the fuel tank (8) Other damage (specify): _____ (9) Unknown</p>

<p>43. Leakage Location of Fuel System-1</p> <p>(0) No fuel tank (1) No fuel leakage</p> <p><i>Primary Area Of Leakage</i></p> <p>(2) Tank (3) Filler neck (4) Cap (5) Lines/pump/filter (6) Vent/emission recovery (8) Other (specify): _____ (9) Unknown</p>	<p>47. Is This Vehicle Equipped With More Than Two Fuel Tanks?</p> <p>(0) No (one or two tanks only)</p> <p><i>Yes - More Than Two Tanks</i></p> <p>(1) Yes -- no damage to any tank or filler cap and no fuel system leakage (2) Yes -- no damage to any tank or filler cap but there is fuel system leakage (specify leakage location): _____ (3) Yes -- damage to an additional tank or filler cap and there is fuel system leakage (specify the following): Type of tank _____ Tank location _____ Filler cap location _____ Tank damage _____ Location of leakage _____ Type of fuel _____ (9) Unknown if more than two tanks</p>
<p>44. Leakage Location of Fuel System-2</p> <p>(0) No fuel tank (1) No fuel leakage</p> <p><i>Single Fuel Type</i></p> <p>(00) No fuel tank (01) Gasoline (02) Diesel (03) CNG (Compressed Natural Gas) (04) LPG (Liquid Petroleum Gas) also known as Propane (05) LNG (Liquid Natural Gas) (06) Methanol (M100 or M85) (07) Ethanol (E100 or E85) (08) Other (Hydrogen or others) (specify): _____</p> <p><i>Electric Powered or Electric/Solar Powered Vehicles</i></p> <p>(10) Lead Acid Battery (11) Nickel-Iron Battery (12) Nickel-Cadmium Battery (13) Sodium Metal Chloride Battery (14) Sodium Sulfur Battery (18) Other (Specify): _____</p> <p>(98) Other Hybrid (specify): _____</p> <p>(99) Unknown fuel type</p>	<p>45. Fuel Type-1</p> <p>46. Fuel Type-2</p>
<h3>COMMENTS</h3> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED ***

(GV10=0)

DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



INTERIOR VEHICLE FORM

1. Primary Sampling Unit Number 10

2. Case Number - Stratum 96 15

3. Vehicle Number 01

INTEGRITY

4. Passenger Compartment Integrity 06

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (back door)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window (backlight)

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window (side window and backlight)

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 1 8. RR 1 9. TG/H 0

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 * 2, Then code 0

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

GLAZING

Type of Window/Windshield Glazing

15. WS 1 16. LF 2 17. RF 2 18. LR 9 19. RR 2

20. BL 2 21. Roof 3 22. Other 0

(0) No glazing

(1) AS-1 - Laminated

(2) AS-2 - Tempered

(3) AS-3 - Tempered-tinted (original)

(4) AS-2 - Tempered-with after market tint

(5) AS-3 - Tempered-tinted (with additional after market tint)

(6) AS-14 - Glass/Plastic

(7) Glazing removed prior to accident

(8) Other (specify):

(9) Unknown

Window Precrash Glazing Status

23. WS 1 24. LF 2 25. RF 2 26. LR 2 27. RR 2

28. BL 1 29. Roof 2 30. Other 0

(0) No glazing

(1) Fixed

(2) Closed

(3) Partially opened

(4) Fully opened

(7) Glazing removed prior to accident

(9) Unknown

Glazing Damage from Impact Forces

31. WS 1 32. LF 1 33. RF 1 34. LR 6 35. RR 1

36. BL 1 37. Roof 1 38. Other 0

(0) No glazing

(1) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces *Air Bag*

(7) Glazing removed prior to accident

(9) Unknown if damaged

Glazing Damage from Occupant Contact

39. WS 1 40. LF 1 41. RF 1 42. LR 1 43. RR 1

44. BL 1 45. Roof 1 46. Other 0

(0) No glazing

(1) No occupant contact to glazing

(2) Glazing contacted by occupant but no glazing damage

(3) Glazing in place and cracked by occupant contact

(4) Glazing in place and holed by occupant contact

(5) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact

(6) Glazing out-of-place by occupant contact and holed by occupant contact

(7) Glazing removed prior to accident

(8) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

STEERING RIM/SPOKE DEFORMATION

(All Measurements Are in Centimeters)

COMPARISON VALUE	—	DAMAGE VALUE	=	DEFORMATION
------------------	---	--------------	---	-------------

	—		=	
--	---	--	---	--

	—	No Deformation	=	
--	---	----------------	---	--

	—		=	
--	---	--	---	--

	—		=	
--	---	--	---	--

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47. _____	48. _____	49. _____	50. _____
2nd	51. _____	52. _____	53. _____	54. _____
3rd	55. _____	56. _____	57. _____	58. _____
4th	59. _____	60. _____	61. _____	62. _____
5th	63. _____	64. _____	65. _____	66. _____
6th	67. _____	68. _____	69. _____	70. _____
7th	71. _____	72. _____	73. _____	74. _____
8th	75. _____	76. _____	77. _____	78. _____
9th	79. _____	80. _____	81. _____	82. _____
10th	83. _____	84. _____	85. _____	86. _____

LOCATION OF INTRUSION

Front Seat
 (11) Left
 (12) Middle
 (13) Right

Second Seat
 (21) Left
 (22) Middle
 (23) Right

Third Seat
 (31) Left
 (32) Middle
 (33) Right

Fourth Seat
 (41) Left
 (42) Middle
 (43) Right

(97) Catastrophic
 (98) Other enclosed area (specify) _____

(99) Unknown

INTRUDING COMPONENT*Interior Components*

- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A (A1/A2)-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Side panel - forward of the A1/A2-pillar
- (11) Door panel (side)
- (12) Side panel - rear of the B-pillar
- (13) Roof (or convertible top)
- (14) Roof side rail
- (15) Windshield
- (16) Windshield header
- (17) Window frame
- (18) Floor pan (includes sill)
- (19) Backlight header
- (20) Front seat back
- (21) Second seat back
- (22) Third seat back
- (23) Fourth seat back
- (24) Fifth seat back
- (25) Seat cushion
- (26) Back door/panel (e.g., tailgate)
- (27) Other interior component (specify): _____

Exterior Components

- (30) Hood
- (31) Outside surface of this vehicle (specify): _____
- (32) Other exterior object in the environment (specify): _____
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): _____
- (99) Unknown

MAGNITUDE OF INTRUSION

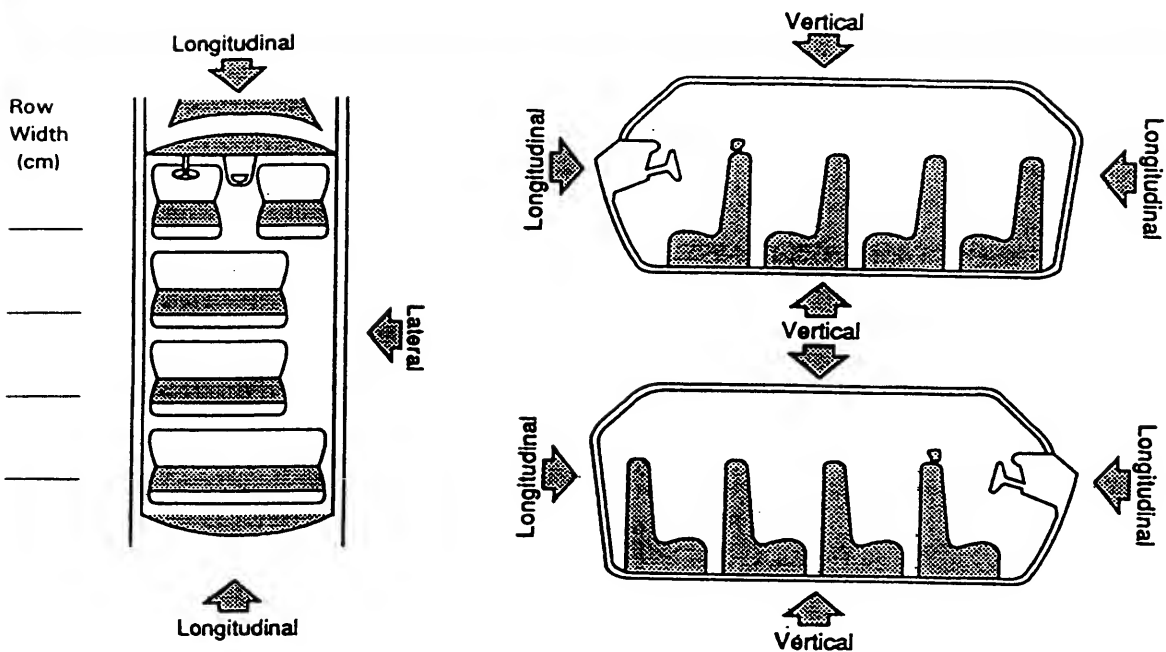
- (1) ≥ 3 centimeters but < 8 centimeters
- (2) ≥ 8 centimeters but < 15 centimeters
- (3) ≥ 15 centimeters but < 30 centimeters
- (4) ≥ 30 centimeters but < 46 centimeters
- (5) ≥ 46 centimeters but < 61 centimeters
- (6) ≥ 61 centimeters
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

INTRUSION WORKSHEET

NOTE: SKETCH INTRUDED AREAS



LOCATION OF INTRUSION	INTRUDED COMPONENT	(All Measurements Are In Centimeters)			DOMINANT CRUSH DIRECTION
		COMPARISON VALUE	INTRUDED VALUE	=	
		-		=	
		-		=	
		No Intrusions			
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	
		-		=	

Document no more than the 15 most severe intrusions

STEERING COLUMN

87. Steering Column Type

- (1) Fixed column
(2) Tilt column
(3) Telescoping column
(4) Tilt and telescoping column
(8) Other column type (specify): _____

(9) Unknown

88. Tilt Steering Column Adjustment

- (0) No tilt steering column
(1) Full up
(2) Between full up and center
(3) Center
(4) Between center and full down
(5) Full down
(9) Unknown

89. Telescoping Steering Column Adjustment

- (0) No telescoping steering column
(1) Full back
(2) Between full back and midpoint
(3) Midpoint
(4) Between midpoint and full forward
(5) Full forward
(9) Unknown

90. Steering Rim/Spoke Deformation

- Code actual measured deformation to the nearest centimeter
(00) No steering rim deformation
(01-14) Actual measured value in centimeters
(15) 15 centimeters or more
(98) Observed deformation cannot be measured
(99) Unknown

91. Location of Steering Rim/Spoke Deformation

- (00) No steering rim deformation

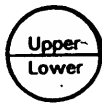
Quarter Sections

- (01) Section A
(02) Section B
(03) Section C
(04) Section D



Half Sections

- (05) Upper half of rim/spoke
(06) Lower half of rim/spoke
(07) Left half of rim/spoke
(08) Right half of rim/spoke



- (09) Complete steering wheel collapse
(10) Undetermined location
(99) Unknown

INSTRUMENT PANEL

92. Odometer Reading

_____ kilometers
Code to the nearest 1,000 kilometers
(000) No odometer
(001) Less than 1,500 kilometers
(500) 499,500 kilometers or more
(999) Unknown
46658 miles X 1.6093 = 75089 kilometers

Source: ODOMETER

93. Instrument Panel Damage from Occupant Contact?

- (0) No
(1) Yes
(9) Unknown

94. Type of Knee Bolster Covering

- (0) No knee bolster
(1) Padded
(2) Rigid plastic
(8) Other (specify): _____
(9) Unknown

95. Knee Bolsters Deformed from Occupant Contact?

- (0) No knee bolster
(1) No deformation
(2) Yes - deformation
(9) Unknown

96. Did Glove Compartment Door Open During Collision(s)?

- (0) No glove compartment door
(1) No - door did not open
(2) Yes - door opened
(9) Unknown

97. Adaptive (Assistive) Driving Equipment

- (0) No adaptive driving equipment
(1) Adaptive driving equipment installed (Check all that apply.)
[] Hand controls for braking/acceleration
[] Steering control devices (attached to OEM steering wheel)
[] Steering knob attached to steering wheel
[] Low effort power steering (unit or device)
[] Replacement steering wheel (i.e., reduced diameter)
[] Joy-stick steering controls
[] Wheelchair tie-downs
[] Modification to seat belts (specify): _____
[] Additional or relocated switches (specify): _____
[] Raised roof
[] Wall-mounted head rest (used behind wheelchair)
[] Other adaptive device (specify): _____

(9) Unknown

FIRST SEAT FRONTAL AIR BAGS

NOTES: Encode the applicable data for the driver and first seat passenger in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

	Driver	Passenger
A-Type of air bag?	8	8
B-Flaps open at tear points?	2	2
C-Flaps damaged?	1	1
D-Air bag damaged?	01	01
E-Source of air bag damage	01	01
F-Air bag tethered?	1	1
G-Air bag have vent ports?	2	2
H-Other occupant contact air bag?	1	1
I-Occupant wearing eyewear?	1	1

A-Type of Air Bag

- (0) Not equipped/not available
- (1) Original manufacturer installed system
- (2) Retrofitted air bag
- (3) Replacement air bag
- (8) Unknown type of air bag
- (9) Unknown

B-Did Air Bag Module Cover Flap(s) Open At Designated Tear Points?

- (0) Not equipped/not available
- (1) No
- (2) Yes
- (3) Deployed, unknown if flap(s) opened at designated tear points
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

C-Were Air Bag Module Cover Flap(s) Damaged?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify):
- (3) Deployed, unknown if air bag module cover flap(s) damaged
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

D-Was There Damage To The Air Bag?

- (00) Not equipped/not available
- (01) Not damaged

Yes - Air Bag Damage

- (02) Ruptured
- (03) Cut
- (04) Torn
- (05) Holed
- (06) Burned
- (07) Abraded
- (88) Other damage (specify):

- (95) Damaged, details unknown
- (96) Deployed, unknown if damaged
- (97) Not deployed
- (98) Unknown if deployed
- (99) Unknown

E-Source of Air Bag Damage

- (00) Not equipped/not available
- (01) Not damaged
- (02) Object worn by occupant, (specify):
- (03) Object carried by occupant, (specify):
- (04) Adaptive/assistive controls, (specify):

- (05) Fire in vehicle
- (06) Thermal burns
- (07) Rescue or emergency efforts
- (88) Other damage source (specify):

- (95) Damaged, unknown source
- (96) Deployed, unknown if damaged
- (97) Not deployed
- (98) Unknown if deployed
- (99) Unknown

F-Was The Air Bag Tethered?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify number of tether straps):
- (3) Deployed, unknown if tethered
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

G-Did The Air Bag Have Vent Ports?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify number of vent ports):
- (3) Deployed, unknown if vent ports present
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

H-Was the Air Bag in this Occupant's Position Contacted by Another Occupant?

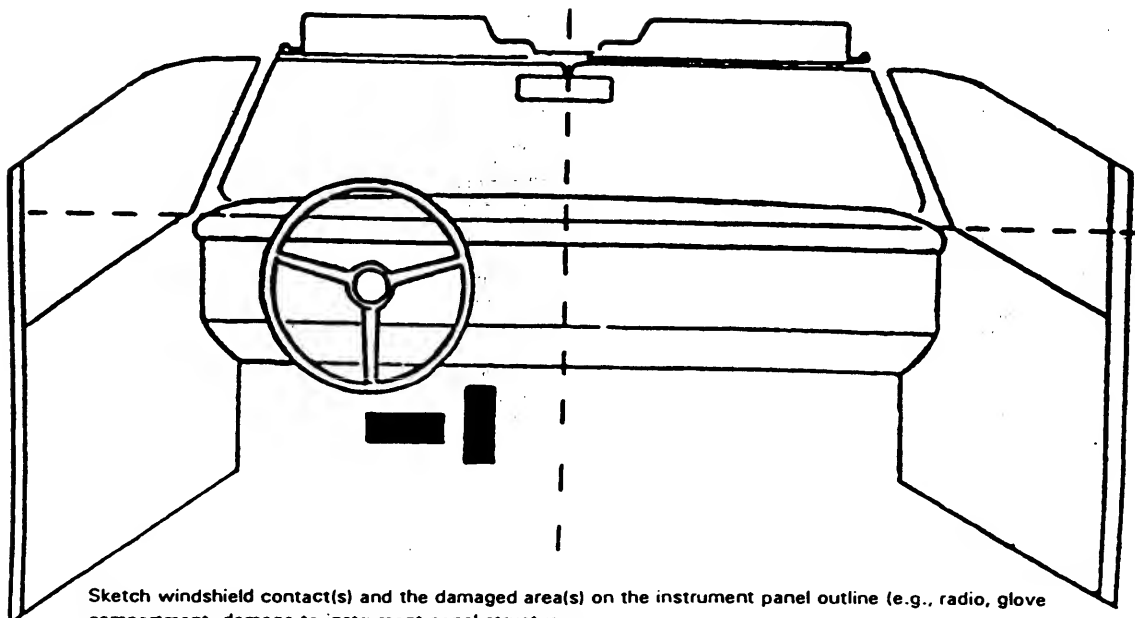
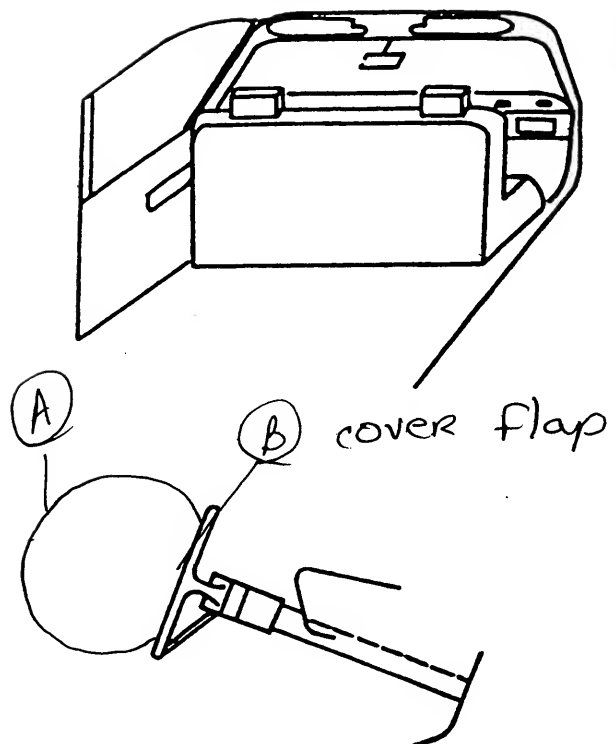
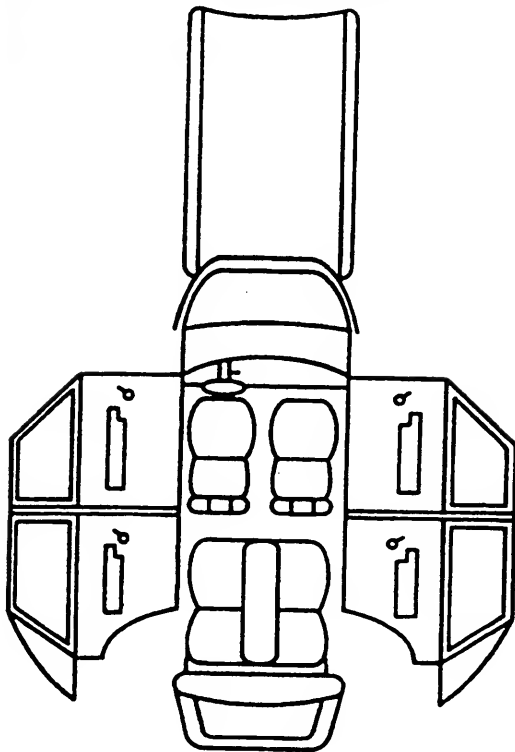
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify):
- (3) Deployed, unknown if other occupant contact to air bag
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

I-Was This Occupant Wearing Eye-wear?

- (0) Not equipped/not available
- (1) No
- (2) Eyeglasses/sunglasses
- (3) Contact lenses
- (4) Deployed, unknown if eyewear worn
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).

Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.

Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	170	01	FACE	makeup, skin,	1
B	175	01	FACE	scuff	3
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

FRONT

- (001) Windshield
 (002) Mirror
 (003) Sunvisor
 (004) Steering wheel rim
 (005) Steering wheel hub/spoke
 (006) Steering wheel (combination of codes 004 and 005)
 (007) Steering column, transmission selector lever, other attachment
 (008) Cellular telephone or CB radio
 (009) Add on equipment (e.g., tape deck, air conditioner)
 (010) Left instrument panel and below
 (011) Center instrument panel and below
 (012) Right instrument panel and below
 (013) Glove compartment door
 (014) Knee bolster
 (015) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
 (016) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
 (017) Windshield reinforced by exterior object, (specify):
 (019) Other front object (specify):

CODES FOR INTERIOR COMPONENTS

LEFT SIDE

- (051) Left side interior surface, excluding hardware or armrests
 (052) Left side hardware or armrest
 (053) Left A (A1/A2)-pillar
 (054) Left B-pillar
 (055) Other left pillar (specify):
 (056) Left side window glass
 (057) Left side window frame
 (058) Left side window sill
 (059) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
 (060) Other left side object (specify):

RIGHT SIDE

- (101) Right side interior surface, excluding hardware or armrests
 (102) Right side hardware or armrest
 (103) Right A (A1/A2)-pillar
 (104) Right B-pillar
 (105) Other right pillar (specify):
 (106) Right side window glass
 (107) Right side window frame
 (108) Right side window sill
 (109) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
 (110) Other right side object (specify):

INTERIOR

- (151) Seat, back support
 (152) Belt restraint webbing/buckle
 (153) Belt restraint B-pillar or door frame attachment point
 (154) Other restraint system component (specify):
 (155) Head restraint system
 (160) Other occupants (specify):
 (161) Interior loose objects
 (162) Child safety seat (specify):
 (163) Other interior object (specify):

AIR BAG

- (170) Air bag-driver side
 (175) Air bag compartment cover-driver side
 (180) Air bag-passenger side
 (185) Air bag compartment cover-passenger side
 (190) Other air bag (specify):
 (195) Other air bag compartment cover (specify):

ROOF

- (201) Front header
 (202) Rear header
 (203) Roof left side rail
 (204) Roof right side rail
 (205) Roof or convertible top

FLOOR

- (251) Floor (including toe pan)
 (252) Floor or console mounted transmission lever, including console
 (253) Parking brake handle
 (254) Foot controls including parking brake

REAR

- (301) Backlight (rear window)
 (302) Backlight storage rack, door, etc.
 (303) Other rear object (specify):

ADAPTIVE (ASSISTIVE) DRIVING EQUIPMENT

- (401) Hand controls for braking/acceleration
 (402) Steering control devices (attached to OEM steering wheel)
 (403) Steering knob attached to steering wheel
 (405) Replacement steering wheel (i.e., reduced diameter)
 (406) Joy stick steering controls
 (407) Wheelchair tie-downs
 (408) Modification to seat belts, (specify):
 (409) Additional or relocated switches, (specify):
 (410) Raised roof
 (411) Wall mounted head rest (used behind wheel chair)
 (412) Other adaptive device (specify):

CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
 (2) Probable
 (3) Possible
 (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Frontal Air Bags--Left Front	Frontal Air Bags--Right Front	Other Air Bag
F I R S T	Availability/Function	/	/	0
	Deployment	/	/	0
	Failure	/	/	0

Air Bag System Availability/Function

- (0) Not equipped/not available
(1) Air bag

Non-functional

- (2) Air bag disconnected (specify): _____

- (3) Air bag not reinstalled
(9) Unknown

**Air Bag System Deployment
(This Occupant Position)**

- (0) Not equipped/not available
(1) Deployed during accident (as a result of impact)
(2) Deployed inadvertently just prior to accident
(3) Deployed, accident sequence undetermined
(4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(5) Unknown if deployed
(7) Nondeployed
(9) Unknown

Are There Indications of Air Bag System Failure? (This Occupant Position)

- (0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

AUTOMATIC BELTS

		Left	Right
F I R S T	A-Availability/Function	0	0
	B-Use	0	0
	C-Type	0	0
	D-Proper Use	0	0
	E-Failure Modes	0	0

A-Automatic (Passive) Belt System Availability/Function

- (0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
(9) Unknown

B-Automatic (Passive) Belt System Use

- (0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)
(3) Automatic belt use unknown
(9) Unknown

C-Automatic (Passive) Belt System Type

- (0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

D-Proper Use of Automatic (Passive) Belt System

- (0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of automatic belt system (specify): _____
(9) Unknown

E-Automatic (Passive) Belt Failure Modes During Accident

- (0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other automatic belt failure (specify): _____
(9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page 11.

If the vehicle has automatic restraints available, encode the appropriate data on page 6.

		Left	Center	Right
FIRST	A-Availability	4	0	4
	B-Evidence of usage	04	00	04
	C-Used in this crash?	04		00
	D-Proper Use	1		0
	E-Failure Modes	1		1
	F-Anchorage Adjustment	1		1
SECOND	A-Availability	4	3	4
	B-Evidence of usage	04	00	04
	C-Used in this crash?	00	00	00
	D-Proper Use	0	0	0
	E-Failure Modes	0	0	0
	F-Anchorage Adjustment	1	1	1
OTHER	A-Availability			
	B-Evidence of usage			
	C-Used in this crash?			
	D-Proper Use			
	E-Failure Modes			
	F-Anchorage Adjustment			

A-Manual (Active) Belt System Availability

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available - type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)
- (8) Other belt (specify):
- (9) Unknown

B/C-Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperable (specify):

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used - type unknown
- (08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat - type unknown
- (18) Other belt used with child safety seat (specify):
- (99) Unknown if belt used

D-Proper Use of Manual (Active) Belts

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify):
- (8) Other improper use of manual belt system (specify):
- (9) Unknown

E-Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):
- (6) Broken retractor
- (7) Combination of above (specify):
- (8) Other manual belt failure (specify):
- (9) Unknown

F-Shoulder Belt Upper Anchorage Adjustment

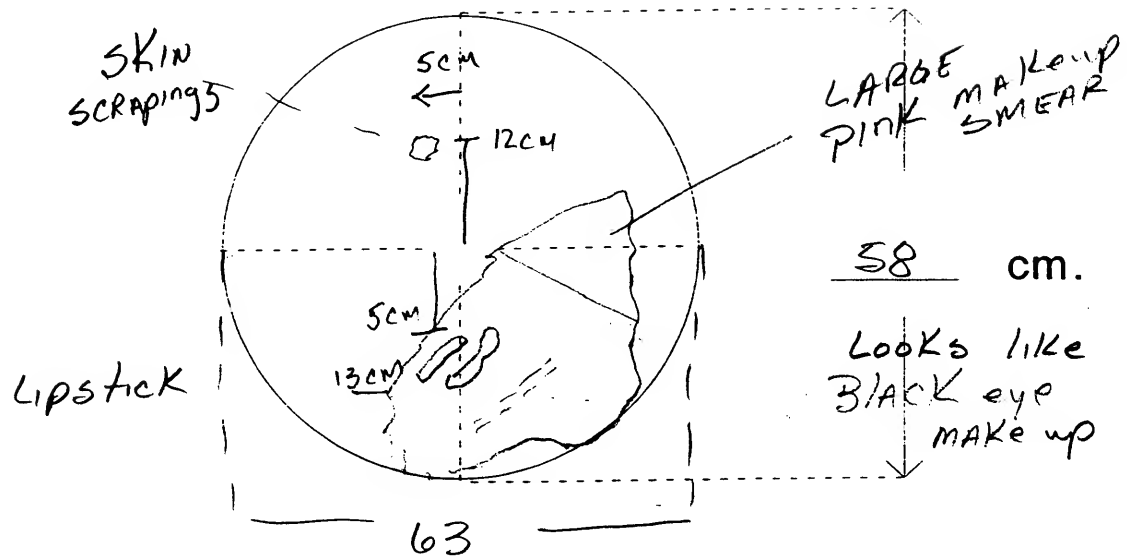
- (0) No shoulder belt
- (1) No upper anchorage adjustment for shoulder belt

Adjustable shoulder Belt Upper Anchorage

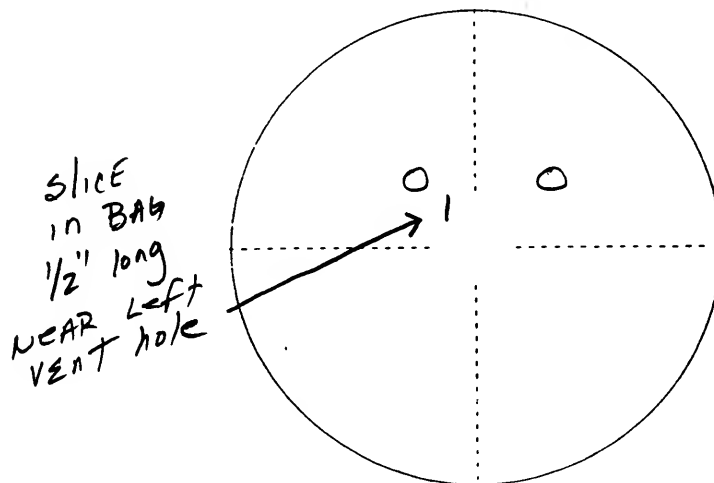
- (2) In full up position
- (3) In mid position
- (4) In full down position
- (5) Position unknown
- (9) Unknown if position has adjustable upper anchorage adjustment

DRIVER AIR BAG DAMAGE AND CONTACT SKETCHES

1. SKETCH DAMAGE AND CONTACT EVIDENCE ON DRIVER AIR BAG (Front)



2. SKETCH DAMAGE AND CONTACT EVIDENCE ON DRIVER AIR BAG (Back)

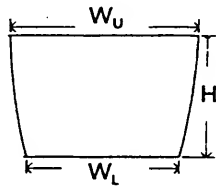


DRIVER AIR BAG SKETCHES (Cont'd)

3. DRIVER AIR BAG MODULE COVER FLAP SIZE (SINGLE)

width (W_U) _____ width (W_L) _____

height (H) _____



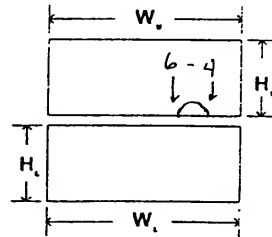
4. DRIVER AIR BAG MODULE COVER FLAP SIZE (DOUBLE)

a. Upper Flap

b. Lower Flap

width (W_U) 19 width (W_L) 18

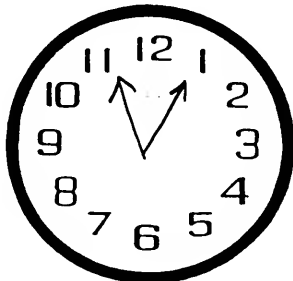
height (H_U) 8 height (H_L) 8



5. SKETCH OF OTHER TYPE OF AIR BAG MODULE FLAP AND SIZE

6. SKETCH OF OTHER TYPE OF AIR BAG VENT PORTS

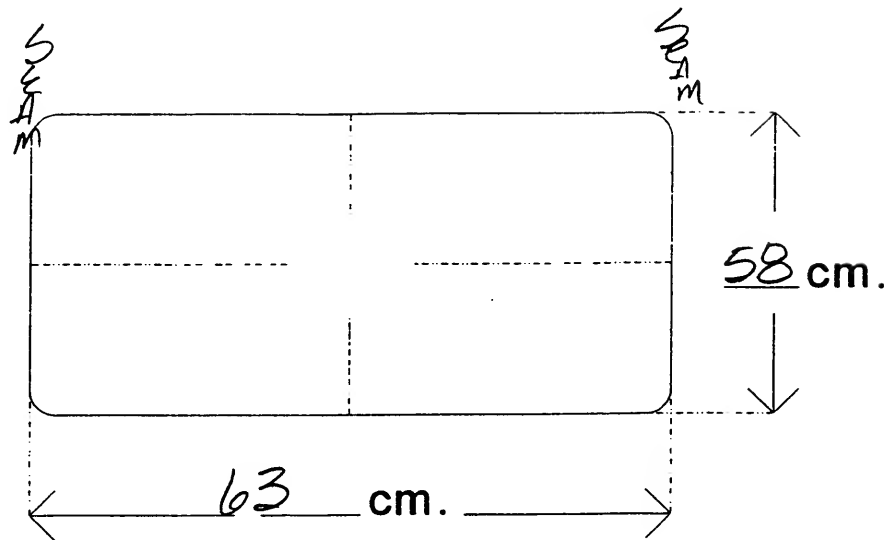
7. SKETCH LOCATION OF CIRCULAR AIR BAG VENT PORTS



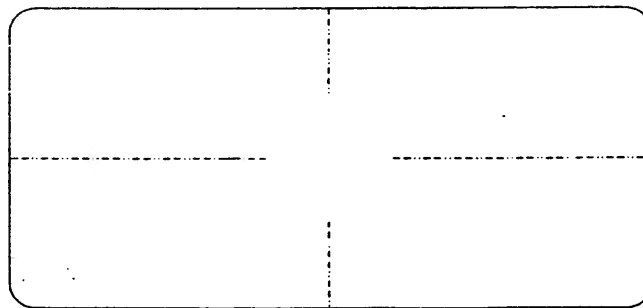
Both vent hole
DIAMETERS ARE
3cm

PASSENGER AIR BAG DAMAGE AND CONTACT SKETCHES

1. SKETCH DAMAGE AND CONTACT EVIDENCE ON PASSENGER AIR BAG (Front)



2. SKETCH DAMAGE AND CONTACT EVIDENCE ON PASSENGER AIR BAG (Back)



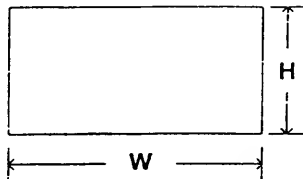
N/A

PASSENGER AIR BAG SKETCHES (Cont'd)

3. PASSENGER AIR BAG MODULE COVER FLAP SIZE (SINGLE)

width (W) _____

height (H) _____



4. PASSENGER AIR BAG MODULE COVER FLAP SIZE (DOUBLE)

a. Upper Flap

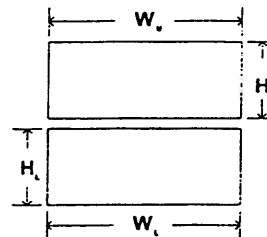
b. Lower Flap

width (W_u) 18

width (W_l) 18

height (H_u) 9

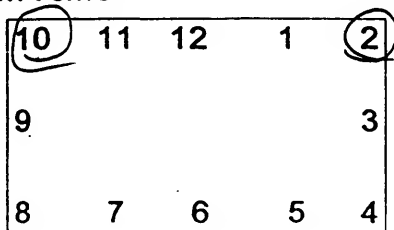
height (H_l) 8



5. SKETCH OF OTHER TYPE OF AIR BAG MODULE FLAP AND SIZE

6. SKETCH OF OTHER TYPE OF AIR BAG VENT PORTS

7. SKETCH LOCATION OF RECTANGULAR AIR BAG VENT PORTS



vent hole
Diameters
4.5cm

"OTHER" AIR BAG DAMAGE AND CONTACT SKETCHES

1. SKETCH DAMAGE AND CONTACT EVIDENCE ON "OTHER" AIR BAG (Front)

Not Applicable

2. SKETCH DAMAGE AND CONTACT EVIDENCE ON "OTHER" AIR BAG (Back)

"OTHER" AIR BAG SKETCHES (Cont'd)

3. SKETCH AIR BAG MODULE FLAP AND SIZE OR OPENING FOR AIRBAG

4. SKETCH AIR BAG VENT PORTS

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
F I R S T	A-Head Restraint Type/Damage	3		3
	B-Seat Type	02		02
	C-Seat Orientation	1		1
	D-Seat Track Position	4		5
	E-Seat Back Incline Pre/Post Impact	23		23
	F-Seat Performance	1		1
S E C O N D	A-Head Restraint Type/Damage	1	0	1
	B-Seat Type	04	04	04
	C-Seat Orientation	1	1	1
	D-Seat Track Position	1	1	1
	E-Seat Back Incline Pre/Post Impact	01	01	01
	F-Seat Performance	1	1	1
T H I R D	A-Head Restraint Type/Damage			
	B-Seat Type			
	C-Seat Orientation			
	D-Seat Track Position			
	E-Seat Back Incline Pre/Post Impact			
	F-Seat Performance			
O T H E R	A-Head Restraint Type/Damage			
	B-Seat Type			
	C-Seat Orientation			
	D-Seat Track Position			
	E-Seat Back Incline Pre/Post Impact			
	F-Seat Performance			

**DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE
(I.E., UNUSUAL OCCUPANT CONTACT PATTERN)**

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat		Not Applicable				
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

<p>1. Type of Child Safety Seat</p> <p>(0) No child safety seat (1) Infant seat (2) Toddler seat (3) Convertible seat (4) Booster seat (7) Other type child safety seat (specify): _____ (8) <u>Unknown child safety seat type</u> (9) Unknown if child safety seat used</p> <p>2. Child Safety Seat Orientation</p> <p>(00) No child safety seat Designed for Rear Facing for This Age/Weight (01) Rear facing (02) Forward facing (08) Other orientation (specify): _____ (09) <u>Unknown orientation</u></p> <p>Designed for Forward Facing for This Age/Weight (11) Rear facing (12) Forward facing (18) Other orientation (specify): _____ (19) <u>Unknown orientation</u></p> <p>Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight (21) Rear facing (22) Forward facing (28) Other orientation (specify): _____ (29) <u>Unknown orientation</u></p> <p>(99) Unknown if child safety seat used</p>	<p>3. Child Safety Seat Harness Usage</p> <p>4. Child Safety Seat Shield Usage</p> <p>5. Child Safety Seat Tether Usage Note: Options Below Are Used for Variables 3-5. (00) No child safety seat</p> <p>Not Designed with Harness/Shield/Tether (01) After market harness/shield/tether added, not used (02) After market harness/shield/tether used (03) Child safety seat used, but no after market harness/shield/tether added (09) Unknown if harness/shield/tether added or used</p> <p>Designed With Harness/Shield/Tether (11) Harness/shield/tether not used (12) Harness/shield/tether used (19) Unknown if harness/shield/tether used</p> <p>Unknown If Designed With Harness/Shield/Tether (21) Harness/shield/tether not used (22) Harness/shield/tether used (29) Unknown if harness/shield/tether used</p> <p>(99) Unknown if child safety seat used</p> <p>6. Child Safety Seat Make/Model (Specify make/model and occupant number)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
--	--

HEAD RESTRAINTS/SEAT EVALUATION

A-Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral — no damage
- (2) Integral — damaged during accident
- (3) Adjustable — no damage
- (4) Adjustable — damaged during accident
- (5) Add-on — no damage
- (6) Add-on — damaged during accident
- (8) Other
- Specify: _____
- (9) Unknown

B-Seat Type (this Occupant Position)

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Box mounted seat (i.e., van type)
- (10) Other seat type (specify): _____
- (99) Unknown

C-Seat Orientation (this Occupant Position)

- (0) Occupant not seated or no seat
- (1) Forward facing seat
- (2) Rear facing seat
- (3) Side facing seat (inward)
- (4) Side facing seat (outward)
- (8) Other (specify): _____
- (9) Unknown

D-Seat Track Adjusted Position Prior To Impact

- (0) Occupant not seated or no seat

- (1) Non-adjustable seat track

Adjustable Seat Track

- (2) Seat at forward most track position
- (3) Seat between forward most and middle track positions
- (4) Seat at middle track position
- (5) Seat between middle and rear most track positions
- (6) Seat at rear most track position
- (9) Unknown

E-Seat Back Incline Prior and Post Impact

- (00) Occupant not seated or no seat
- (01) Not adjustable

Upright prior to impact

- (11) Moved to completely rearward position
- (12) Moved to rearward midrange position
- (13) Moved to slightly rearward position
- (14) Retained pre-impact position
- (15) Moved to slightly forward position
- (16) Moved to forward midrange position
- (17) Moved to completely forward position

Slightly reclined prior to impact

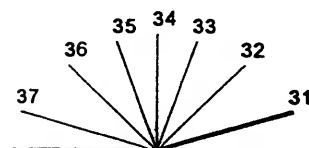
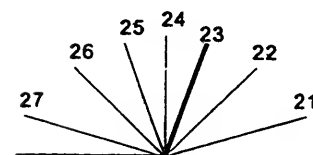
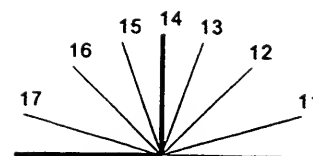
- (21) Moved to completely rearward position
- (22) Moved to rearward midrange position
- (23) Retained pre-impact position
- (24) Moved to upright position
- (25) Moved to slightly forward position
- (26) Moved to forward midrange position
- (27) Moved to completely forward position

Completely reclined prior to impact

- (31) Retained pre-impact position
- (32) Moved to rearward midrange position
- (33) Moved to slightly rearward position
- (34) Moved to upright position
- (35) Moved to slightly forward position
- (36) Moved to forward midrange position
- (37) Moved to completely forward position
- (99) Unknown

F-Seat Performance (this Occupant Position)

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed (specify): _____
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____
- (7) Combination of above (specify): _____
- (8) Other (specify): _____
- (9) Unknown

Coding diagrams for *Seat Back Incline Position Prior and Post Impact*

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

EJECTION No ☒ Yes ☐

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection

- (1) Complete ejection
(2) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area

- (1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear

(7) Roof

- (8) Other area (e.g., back of pickup, etc.) (specify):

(9) Unknown

Ejection Medium

- (1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify):

(5) Integral structure

- (8) Other medium (specify):

(9) Unknown

Medium Status (Immediately Prior to Impact)

- (1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No ☒ Yes ☐

Describe entrapment mechanism:

Component(s):

(Note on vehicle interior sketch)

**NASS CDS INTERVIEW FORM:
CASE VEHICLE DRIVER**



INTERVIEW FORM (A)

1. Primary Sampling Unit Number 10
2. Case Number - Stratum 9615
3. Vehicle Number 01

Interviewee(s) Role or Name(s): CASE VEH DRIVER
Phone number: _____

Review all available information and interview questions prior to conducting interview(s) to ensure the acquisition of all pertinent data.

If the driver was not the person interviewed, was an appointment made for a follow-up interview?

DRIVER'S DESCRIPTION OF ACCIDENT EVENTS

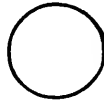
A1
I was S/B on exiting onto N/B
I lost control of CAR I hit wall on
(L) then went across hit wall right
came to abrupt stop. AIR BAGS
deployed on 2ND impact. I ended up
facing south on (R) SIDE almost all
the way off lane on shoulder

OCCUPANT'S DESCRIPTION OF ACCIDENT EVENTS

Front end of CAR was not right
was in previous accid. Veh tended
to sway more than normal.

SPECIFIC QUESTIONS TO ASK INTERVIEWEE

ACCIDENT DIAGRAM



NORTH

Use this diagram to aid in relating interviewee accident trajectory data (i.e., pre-impact to FRP orientations) to identifiable objects in the environment.

CRASH DATA INFORMATION	
IF POSSIBLE OBTAIN THIS INFORMATION FROM THE DRIVER:	
SOURCE OF INFORMATION:	<input checked="" type="checkbox"/> Driver <input type="checkbox"/> Other occupant <input type="checkbox"/> Relative/friend
TRAVEL DIRECTION?	<input type="checkbox"/> North <input checked="" type="checkbox"/> South <input checked="" type="checkbox"/> East <input type="checkbox"/> West (Or where were they coming from or going to?)
LANE?	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> Other Note: lane 1 is the right curb lane
ROAD CONDITION?	<input type="checkbox"/> Dry <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Snow <input type="checkbox"/> Slush <input type="checkbox"/> Ice <input type="checkbox"/> Sand, dirt, oil <input type="checkbox"/> Other (specify)
WEATHER CONDITIONS? (Check all that apply)	<input type="checkbox"/> No adverse conditions <input checked="" type="checkbox"/> Rain <input type="checkbox"/> Fog <input type="checkbox"/> Sleet <input type="checkbox"/> Hail <input type="checkbox"/> Snow <input type="checkbox"/> Other (specify)
SIGN OR SIGNAL PRESENT? (check all that apply)	<input type="checkbox"/> Traffic control signal (includes flashing beacons, lane control signals, and green / amber / red signal) <input type="checkbox"/> Stop sign <input type="checkbox"/> Yield sign <input type="checkbox"/> School zone sign <input type="checkbox"/> Other regulatory sign (No "U" turn, left turn only, wrong way, etc.) specify: _____ <input checked="" type="checkbox"/> Warning sign (Winding road sign, stop ahead, intersection signs, etc.) specify: <u>EXIT signs to</u> <input type="checkbox"/> Miscellaneous control (including railroad controls) specify: _____ <input type="checkbox"/> None <input type="checkbox"/> Unknown
WAS THE CONTROL FUNCTIONING PROPERLY?	<input type="checkbox"/> No traffic control device present <input type="checkbox"/> Not functioning properly (includes defaced, badly worn, covered with snow, rotated etc.) specify: <input checked="" type="checkbox"/> Functioning properly <input type="checkbox"/> Unknown
SPEED BEFORE THE IMPACT? (in mph)	<input type="checkbox"/> Stopped <input type="checkbox"/> 11-20 <input checked="" type="checkbox"/> 31-40 <input type="checkbox"/> 51-60 <input type="checkbox"/> 70+ <input type="checkbox"/> 1-10 <input type="checkbox"/> 21-30 <input type="checkbox"/> 41-50 <input type="checkbox"/> 61-70 <input type="checkbox"/> Unknown
BEFORE IMPACT, INTENDING TO ... ? (check all that apply)	<input type="checkbox"/> Go straight <input type="checkbox"/> Stopped <input type="checkbox"/> Turn left <input type="checkbox"/> Turn right <input type="checkbox"/> Slow down <input type="checkbox"/> Accelerate <input type="checkbox"/> Back up <input type="checkbox"/> Change lanes to right <input type="checkbox"/> Other (specify): <u>exit onto</u> <input type="checkbox"/> Change lanes to left <u>Interstate</u>
CONTROL LOSS DUE TO WEATHER OR MECHANICAL PROBLEMS?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes (describe)
AVOIDANCE ACTIONS?	<input type="checkbox"/> None <input type="checkbox"/> Braking with lock-up <input type="checkbox"/> Accelerating / <u>2nd impact</u> <input checked="" type="checkbox"/> Braking without lock-up <input checked="" type="checkbox"/> Steering left <input type="checkbox"/> Unknown <input type="checkbox"/> Releasing brakes <input checked="" type="checkbox"/> Steering right <u>1st impact</u>
LOCATION OF VEHICLE AT TIME OF IMPACT?	<input type="checkbox"/> Original travel lane <input type="checkbox"/> Different travel lane <input type="checkbox"/> In intersection <input checked="" type="checkbox"/> Off roadway to right <input type="checkbox"/> Off roadway to left <input type="checkbox"/> Other (specify): _____
SPEED AT THE TIME OF IMPACT? (in mph)	<input type="checkbox"/> Stopped <input type="checkbox"/> 11-20 <input type="checkbox"/> 31-40 <input type="checkbox"/> 51-60 <input type="checkbox"/> 70+ <input type="checkbox"/> 1-10 <input type="checkbox"/> 21-30 <input type="checkbox"/> 41-50 <input type="checkbox"/> 61-70 <input type="checkbox"/> Unknown
DESCRIBE ALL THE IMPACTS to the vehicle and how this vehicle moved to its stopped position, after the collision?	<u>second impact set off</u> <u>AIR bag</u>

VEHICLE INFORMATION

ROLLOVER DATA

DID THIS VEHICLE ROLL OVER DURING THE CRASH?

☐ YES -- ASK THE FOLLOWING QUESTIONS☒ NO -- SKIP TO "FIRE DATA" BELOW
☐ UNKNOWN -- SKIP TO "FIRE DATA" BELOW

ROLLOVER BEGAN

☐ On roadway ☐ On shoulder ☐ On roadside or median
☐ Unknown

ROLLOVER CAUSE?

☐ Other vehicle (specify vehicle number) _____
☐ Contact to object (specify): _____
☐ Other cause (specify): _____
☐ Unknown

DIRECTION OF VEHICLE ROLL?

☐ Toward the right (passenger side)
☐ Toward the left (driver side)
☐ End-over-end
☐ Unknown

NUMBER OF TURNS

____ Number of QUARTER TURNS ☐ Unknown
____ Number of COMPLETE TURNSPLANE IN CONTACT WITH
GROUND AT FINAL REST?☐ Left side ☐ Top
☐ Right side ☐ Wheels
☐ Unknown

FIRE DATA

DID THIS VEHICLE EXPERIENCE A FIRE?

☐ YES -- ASK THE FOLLOWING QUESTIONS☒ NO -- SKIP THIS SECTION
☐ UNKNOWN -- SKIP THIS SECTIONFIRE STARTED, OR SMOKE
WAS FIRST SEEN ...☐ Under the hood ☐ In the trunk/cargo area
☐ Behind the instrument panel ☐ Under the vehicle
☐ In the passenger compartment ☐ From other involved vehicle
☐ UnknownFIRE START WITH THE
ELECTRICAL SYSTEM?☐ No ☐ Unknown☐ Yes (specify): _____FIRE START WITH THE FUEL
SYSTEM?☐ No ☐ Unknown☐ Yes -- specify Which part of the fuel system may have been involved?
☐ Fuel tank
☐ Fuel lines
☐ Engine compartment (specify component if known)
☐ Unknown

Describe any additional rollover or fire information here:

ADDITIONAL VEHICLE INFORMATION



YEAR, MAKE AND MODEL?	Year: 19 <u>92</u> Make: <u>MAZDA</u> Model: <u>929</u>
PREVIOUS OR POST-CRASH DAMAGE?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes - describe: <u>BOUGHT USED; IN PREVIOUS ACCIDENT; PER INSURANCE.</u> <input type="checkbox"/> Unknown
DOORS OR HATCH OPEN DURING THE CRASH?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> LF <input type="checkbox"/> RF <input type="checkbox"/> LR <input type="checkbox"/> RR <input type="checkbox"/> HATCH <input type="checkbox"/> OTHER _____ <input type="checkbox"/> Unknown
WINDOWS BREAK DURING THE CRASH?	<input type="checkbox"/> No Check all that apply <input checked="" type="checkbox"/> Yes <input type="checkbox"/> WS <input type="checkbox"/> LF <input type="checkbox"/> RF <input checked="" type="checkbox"/> LR <input type="checkbox"/> RR <input type="checkbox"/> BL <input type="checkbox"/> Roof <input type="checkbox"/> Other <input type="checkbox"/> Unknown
WINDOW PRECRASH STATUS	<u>All closed; had A/C ON</u> <input type="checkbox"/> WS <input type="checkbox"/> LF <input type="checkbox"/> RF <input type="checkbox"/> LR <input type="checkbox"/> RR <input type="checkbox"/> BL <input type="checkbox"/> Roof <input type="checkbox"/> Other "O" = open "C" = Closed "P" = partially open "U" = Unknown
GLOVE COMPARTMENT DOOR OPEN DURING THE CRASH?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - describe: <input type="checkbox"/> Unknown
CARGO IN THE VEHICLE?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - describe: Approximate weight - _____ pounds
VEHICLE MILEAGE	_____ miles <input checked="" type="checkbox"/> Unknown
IF VEHICLE HAS NOT BEEN INSPECTED	Current location of the vehicle: _____ _____ Contact person: _____
Detail any notes, questions to ask interviewee (i.e., rescue personnel damage to vehicle) or directions to vehicle location:	

SPECIAL CRASH INVESTIGATION ADDENDUM: DRIVER INFORMATION

Do you recall the type of development in the area of the crash?	<input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Undeveloped <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Agricultural <input type="checkbox"/> School
What were the weather conditions at the time of the crash?	<input type="checkbox"/> Clear (no clouds, no precipitation) <input type="checkbox"/> Cloudy (partially cloudy, no precipitation) <input type="checkbox"/> Overcast (full cloud cover, no precipitation) <input checked="" type="checkbox"/> Precipitating <input type="checkbox"/> Unknown	
What was the type of precipitation?	<input type="checkbox"/> No precipitation <input checked="" type="checkbox"/> Raining <input type="checkbox"/> Sleet <input type="checkbox"/> Hailing	
What was the condition of the road surface?	<input type="checkbox"/> Dry <input type="checkbox"/> Snowy, slushy <input type="checkbox"/> Other (e.g., sand, dirt, oil on surface, etc.) <input type="checkbox"/> Unknown	
How would you describe the amount of traffic at the time of the crash?	<input checked="" type="checkbox"/> Heavy <input type="checkbox"/> Light	
What is your occupation?	<input checked="" type="checkbox"/> Moderate <input type="checkbox"/> No other traffic present	
What is your occupation?	<input type="checkbox"/> Professional <input type="checkbox"/> Government official <input type="checkbox"/> Management <input type="checkbox"/> Sales <input type="checkbox"/> Craftsman and foreman <input type="checkbox"/> Service worker <input type="checkbox"/> Farmers and farm-managers <input type="checkbox"/> Farm labors and foreman <input type="checkbox"/> Private household worker <input type="checkbox"/> Housewife	
How long have you driven this vehicle?	<input type="checkbox"/> Technical <input type="checkbox"/> Proprietors <input type="checkbox"/> Clerical <input type="checkbox"/> Student <input type="checkbox"/> Other: <u>HAIR stylist</u>	
How many miles do you think that you have driven it in the last 12-month period?	<input type="checkbox"/> Other: _____	
How often do you drive this particular roadway?	Years: _____ Months: <u>6 DAYS</u>	
How often do you drive this particular roadway?	Miles: <u>15,000</u> <u>60 miles in case veh</u>	
How often do you drive this particular roadway?	<input type="checkbox"/> Daily <input type="checkbox"/> Once weekly <input type="checkbox"/> Once monthly <input type="checkbox"/> First time on road	
Where were you coming from just prior to the crash?	<input checked="" type="checkbox"/> Twice weekly <input type="checkbox"/> Twice monthly <input type="checkbox"/> Very infrequently	
Where were you coming from just prior to the crash?	<input type="checkbox"/> Home <input type="checkbox"/> School <input type="checkbox"/> Social/recreational <input type="checkbox"/> Personal business	
Where were you intending to go when the crash occurred?	<input checked="" type="checkbox"/> Work <input type="checkbox"/> Shopping <input type="checkbox"/> Restaurant <input type="checkbox"/> Other: _____	
Where were you intending to go when the crash occurred?	<input type="checkbox"/> Home <input type="checkbox"/> School <input type="checkbox"/> Social/recreational <input type="checkbox"/> Personal business	
Where were you intending to go when the crash occurred?	<input type="checkbox"/> Work <input checked="" type="checkbox"/> Shopping <input type="checkbox"/> Restaurant <input type="checkbox"/> Other: _____	

OCCUPANT DATA QUESTIONS

HOW MANY PEOPLE WERE IN THE VEHICLE AT THE TIME OF THE CRASH?

	DRIVER	OCCUPANT # ____	OCCUPANT # ____
SEATING POSITION? Front Left (FL) Second Left (2L) Front Middle (FM) Second Middle (2M) Front Right (FR) Second Right (2R) Third Left (3L) Other (SPECIFY in block) Third Middle (3M) Third Right (3R)	FRONT LEFT		
SEX, HEIGHT, WEIGHT, AND AGE? CIRCLE DRIVER'S RACE: White <u>Black</u> American Indian 157.5 Eskimo or Aleut Asian or Pacific Islander 68.0 Other (specify): Unknown	<input type="checkbox"/> M <input checked="" type="checkbox"/> F - Not pregnant <input type="checkbox"/> F - Pregnant - # of months ____ <input type="checkbox"/> F - Unk. if pregnant HEIGHT: <u>5'2"</u> WEIGHT: <u>150</u> AGE: <u>42</u> DRIVER OF HISPANIC ORIGIN? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> U	<input type="checkbox"/> M <input type="checkbox"/> F - Not pregnant <input type="checkbox"/> F - Pregnant - # of months ____ <input type="checkbox"/> F - Unk. if pregnant HEIGHT: ____ WEIGHT: ____ AGE: ____ 	<input type="checkbox"/> M <input type="checkbox"/> F - Not pregnant <input type="checkbox"/> F - Pregnant - # of months ____ <input type="checkbox"/> F - Unk. if pregnant HEIGHT: ____ WEIGHT: ____ AGE: ____ 
OCCUPANT POSTURE A) Kneeling or standing on seat B) Lying on or across seat C) Kneeling, standing or sitting in front of seat D) Sitting sideways, turned to side or back E) Sitting on console F) Lying back in reclined position G) Other (specify) H) Unknown	<input type="checkbox"/> Leaning to left <input type="checkbox"/> Leaning to right <input checked="" type="checkbox"/> Sitting upright <input type="checkbox"/> Unknown Indicate all letters that apply and describe if other than above	<input type="checkbox"/> Leaning to left <input type="checkbox"/> Leaning to right <input type="checkbox"/> Sitting upright <input type="checkbox"/> Unknown Indicate all letters that apply and describe if other than above	<input type="checkbox"/> Leaning to left <input type="checkbox"/> Leaning to right <input type="checkbox"/> Sitting upright <input type="checkbox"/> Unknown Indicate all letters that apply and describe if other than above
FEET AND HANDS/ARMS LOCATION JUST PRIOR TO IMPACT <u>FEET</u> A) On floor or foot controls B) One or both on dash C) One or both on seat D) Other (specify) E) Unknown <u>HANDS / ARMS</u> F) Both hands on steering wheel G) One on wheel, other hand resting or adjusting a control (specify hand on wheel and control involved) H) Dialing a cellular phone (specify location and type of phone) I) Holding a cellular phone (specify location and type of phone) J) Bracing with one or both hands K) On lap L) One or both out of window (specify) M) Other (specify) N) Unknown	Indicate all letters that apply and further describe as needed <u>A</u> <u>F</u>	Indicate all letters that apply and further describe as needed	Indicate all letters that apply and further describe as needed

OCCUPANT DATA CONTINUED ON NEXT PAGE

OCCUPANT DATA QUESTIONS (continued)

	DRIVER	OCCUPANT # ____	OCCUPANT # ____																																																
BACK UP AGAINST THE SEAT BACK?	<input type="checkbox"/> No (describe) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No (describe) <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No (describe) <input type="checkbox"/> Yes <input type="checkbox"/> Unknown																																																
ADJUSTABLE SEAT TRACK, IF "YES" WHERE WAS THE TRACK PRIOR TO IMPACT?	<input type="checkbox"/> Not adjustable <input checked="" type="checkbox"/> Seat all the way forward <input checked="" type="checkbox"/> Between forward and middle <input type="checkbox"/> At middle position <input type="checkbox"/> Between middle and rear position <input type="checkbox"/> Seat all the way rearward <input type="checkbox"/> Unknown	<input type="checkbox"/> Not adjustable <input type="checkbox"/> Seat all the way forward <input type="checkbox"/> Between forward and middle <input type="checkbox"/> At middle position <input type="checkbox"/> Between middle and rear position <input type="checkbox"/> Seat all the way rearward <input type="checkbox"/> Unknown	<input type="checkbox"/> Not adjustable <input type="checkbox"/> Seat all the way forward <input type="checkbox"/> Between forward and middle <input type="checkbox"/> At middle position <input type="checkbox"/> Between middle and rear position <input type="checkbox"/> Seat all the way rearward <input type="checkbox"/> Unknown																																																
ADJUSTABLE SEAT BACK, IF "YES" WHERE WAS THE BACK PRE AND POST IMPACT	<table border="0"> <tr> <td><u>PRE</u></td> <td><u>POST</u></td> </tr> <tr> <td><input type="checkbox"/> Not adjustable</td> <td><input type="checkbox"/> Not adjustable</td> </tr> <tr> <td><input checked="" type="checkbox"/> Completely upright</td> <td><input checked="" type="checkbox"/> Completely upright</td> </tr> <tr> <td><input type="checkbox"/> Slightly reclined</td> <td><input type="checkbox"/> Slightly reclined</td> </tr> <tr> <td><input type="checkbox"/> Completely reclined</td> <td><input type="checkbox"/> Completely reclined</td> </tr> <tr> <td><input type="checkbox"/> Slightly forward of upright</td> <td><input type="checkbox"/> Slightly forward of upright</td> </tr> <tr> <td><input type="checkbox"/> Completely forward</td> <td><input type="checkbox"/> Completely forward</td> </tr> <tr> <td><input type="checkbox"/> Unknown</td> <td><input type="checkbox"/> Unknown</td> </tr> </table>	<u>PRE</u>	<u>POST</u>	<input type="checkbox"/> Not adjustable	<input type="checkbox"/> Not adjustable	<input checked="" type="checkbox"/> Completely upright	<input checked="" type="checkbox"/> Completely upright	<input type="checkbox"/> Slightly reclined	<input type="checkbox"/> Slightly reclined	<input type="checkbox"/> Completely reclined	<input type="checkbox"/> Completely reclined	<input type="checkbox"/> Slightly forward of upright	<input type="checkbox"/> Slightly forward of upright	<input type="checkbox"/> Completely forward	<input type="checkbox"/> Completely forward	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	<table border="0"> <tr> <td><u>PRE</u></td> <td><u>POST</u></td> </tr> <tr> <td><input type="checkbox"/> Not adjustable</td> <td><input type="checkbox"/> Not adjustable</td> </tr> <tr> <td><input type="checkbox"/> Completely upright</td> <td><input type="checkbox"/> Completely upright</td> </tr> <tr> <td><input type="checkbox"/> Slightly reclined</td> <td><input type="checkbox"/> Slightly reclined</td> </tr> <tr> <td><input type="checkbox"/> Completely reclined</td> <td><input type="checkbox"/> Completely reclined</td> </tr> <tr> <td><input type="checkbox"/> Slightly forward of upright</td> <td><input type="checkbox"/> Slightly forward of upright</td> </tr> <tr> <td><input type="checkbox"/> Completely forward</td> <td><input type="checkbox"/> Completely forward</td> </tr> <tr> <td><input type="checkbox"/> Unknown</td> <td><input type="checkbox"/> Unknown</td> </tr> </table>	<u>PRE</u>	<u>POST</u>	<input type="checkbox"/> Not adjustable	<input type="checkbox"/> Not adjustable	<input type="checkbox"/> Completely upright	<input type="checkbox"/> Completely upright	<input type="checkbox"/> Slightly reclined	<input type="checkbox"/> Slightly reclined	<input type="checkbox"/> Completely reclined	<input type="checkbox"/> Completely reclined	<input type="checkbox"/> Slightly forward of upright	<input type="checkbox"/> Slightly forward of upright	<input type="checkbox"/> Completely forward	<input type="checkbox"/> Completely forward	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	<table border="0"> <tr> <td><u>PRE</u></td> <td><u>POST</u></td> </tr> <tr> <td><input type="checkbox"/> Not adjustable</td> <td><input type="checkbox"/> Not adjustable</td> </tr> <tr> <td><input type="checkbox"/> Completely upright</td> <td><input type="checkbox"/> Completely upright</td> </tr> <tr> <td><input type="checkbox"/> Slightly reclined</td> <td><input type="checkbox"/> Slightly reclined</td> </tr> <tr> <td><input type="checkbox"/> Completely reclined</td> <td><input type="checkbox"/> Completely reclined</td> </tr> <tr> <td><input type="checkbox"/> Slightly forward of upright</td> <td><input type="checkbox"/> Slightly forward of upright</td> </tr> <tr> <td><input type="checkbox"/> Completely forward</td> <td><input type="checkbox"/> Completely forward</td> </tr> <tr> <td><input type="checkbox"/> Unknown</td> <td><input type="checkbox"/> Unknown</td> </tr> </table>	<u>PRE</u>	<u>POST</u>	<input type="checkbox"/> Not adjustable	<input type="checkbox"/> Not adjustable	<input type="checkbox"/> Completely upright	<input type="checkbox"/> Completely upright	<input type="checkbox"/> Slightly reclined	<input type="checkbox"/> Slightly reclined	<input type="checkbox"/> Completely reclined	<input type="checkbox"/> Completely reclined	<input type="checkbox"/> Slightly forward of upright	<input type="checkbox"/> Slightly forward of upright	<input type="checkbox"/> Completely forward	<input type="checkbox"/> Completely forward	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown
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<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown																																																		
TILT STEERING COLUMN ADJUSTMENT PRIOR TO IMPACT	<input checked="" type="checkbox"/> Not adjustable <input type="checkbox"/> Center <input type="checkbox"/> Full down	<input type="checkbox"/> Full up <input type="checkbox"/> Between center and full down <input type="checkbox"/> Unknown																																																	
TELESCOPING STEERING COLUMN PRIOR TO IMPACT	<input checked="" type="checkbox"/> Not adjustable <input type="checkbox"/> Midpoint <input type="checkbox"/> Full forward	<input type="checkbox"/> Full back <input type="checkbox"/> Between midpoint and full forward <input type="checkbox"/> Unknown																																																	

Did this vehicle have a cellular phone in it during the crash?

☒ No☐ Yes - describe type: _____
(e.g., portable, mounted in vehicle, flip phone, etc.)☐ Unknown**(Note to researcher: try to determine any driver distractions without implying fault)****Was the driver doing any of the following? (check all that apply - and specify)**

- ☐ Talking to or listening to another occupant (specify):
☐ Was there a moving object in vehicle (specify):
☐ Talking or listening on a cellular phone (specify):
☐ Dialing a cellular phone (specify):
☐ Adjusting climate control (specify):
☐ Adjusting radio, CD or cassette player (specify):
☐ Using other device or object in vehicle (specify):
☐ Sleepy / asleep (specify):
☐ Distracted by outside person, object, or event (specify):
☐ Eating or drinking (specify):
☐ Smoking related (specify):
☐ Other (specify):
☐ Unknown

RESTRAINT INFORMATION

	DRIVER	OCCUPANT # ____	OCCUPANT # ____
TYPE OF SEAT BELT AVAILABLE NOTE: If a belt is not available for a seat position -- describe reason	<input type="checkbox"/> Unknown <input type="checkbox"/> Lap belt <input type="checkbox"/> Shoulder belt <input checked="" type="checkbox"/> Lap & Shoulder <input type="checkbox"/> Not available * * Describe:	<input type="checkbox"/> Unknown <input type="checkbox"/> Lap belt <input type="checkbox"/> Shoulder belt <input type="checkbox"/> Lap & Shoulder <input type="checkbox"/> Not available * * Describe:	<input type="checkbox"/> Unknown <input type="checkbox"/> Lap belt <input type="checkbox"/> Shoulder belt <input type="checkbox"/> Lap & Shoulder <input type="checkbox"/> Not available * * Describe:
DO BELTS MOVE ALONG A MOTORIZED TRACK FOR THIS SEAT? <i>(i.e., 2-point automatic belt)</i>	<input type="checkbox"/> Unknown <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes *	<input type="checkbox"/> Unknown <input type="checkbox"/> No <input type="checkbox"/> Yes *	<input type="checkbox"/> Unknown <input type="checkbox"/> No <input type="checkbox"/> Yes *
IF "YES", WERE THEY WORKING PROPERLY?	<input type="checkbox"/> Yes <input type="checkbox"/> No (describe)	<input type="checkbox"/> Yes <input type="checkbox"/> No (describe)	<input type="checkbox"/> Yes <input type="checkbox"/> No (describe)
ARE ANY BELTS ATTACHED TO THE DOOR? <i>(i.e., 3-point automatic belt)</i>	<input type="checkbox"/> Unknown <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes *	<input type="checkbox"/> Unknown <input type="checkbox"/> No <input type="checkbox"/> Yes *	<input type="checkbox"/> Unknown <input type="checkbox"/> No <input type="checkbox"/> Yes *
IF "YES", DOES IT CROSS:	<input type="checkbox"/> Chest <input type="checkbox"/> Lap <input type="checkbox"/> Both	<input type="checkbox"/> Chest <input type="checkbox"/> Lap <input type="checkbox"/> Both	<input type="checkbox"/> Chest <input type="checkbox"/> Lap <input type="checkbox"/> Both
OCCUPANT WEARING ANY SEATBELT?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown
SKIP THE FOLLOWING IF NO SEAT BELT WAS WORN			
TYPE OF BELT WORN?	<input type="checkbox"/> Lap belt <input type="checkbox"/> Shoulder belt <input checked="" type="checkbox"/> Lap & Shoulder <input type="checkbox"/> Unknown	<input type="checkbox"/> Lap belt <input type="checkbox"/> Shoulder belt <input type="checkbox"/> Lap & Shoulder <input type="checkbox"/> Unknown	<input type="checkbox"/> Lap belt <input type="checkbox"/> Shoulder belt <input type="checkbox"/> Lap & Shoulder <input type="checkbox"/> Unknown
LAP BELT SITUATED?	<input checked="" type="checkbox"/> Low on lap <input type="checkbox"/> Across stomach <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Low on lap <input type="checkbox"/> Across stomach <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Low on lap <input type="checkbox"/> Across stomach <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown
SHOULDER BELT SITUATED?	<input checked="" type="checkbox"/> Over shoulder <input type="checkbox"/> Under the arm <input type="checkbox"/> Behind back <input type="checkbox"/> Behind seat <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Over shoulder <input type="checkbox"/> Under the arm <input type="checkbox"/> Behind back <input type="checkbox"/> Behind seat <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Over shoulder <input type="checkbox"/> Under the arm <input type="checkbox"/> Behind back <input type="checkbox"/> Behind seat <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown
Describe any breaks, tears, or failures to any of the seat belts:			

EJECTION, ENTRAPMENT, MOBILITY INFORMATION

	DRIVER	OCCUPANT # ____	OCCUPANT # ____
ANY PART OF BODY THROWN OUTSIDE THE VEHICLE DURING THE CRASH?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes * <input type="checkbox"/> Unknown * If "Yes" - what part(s) were ejected, and what area of the vehicle was involved.	<input type="checkbox"/> No <input type="checkbox"/> Yes * <input type="checkbox"/> Unknown * If "Yes" - what part(s) were ejected, and what area of the vehicle was involved.	<input type="checkbox"/> No <input type="checkbox"/> Yes * <input type="checkbox"/> Unknown * If "Yes" - what part(s) were ejected, and what area of the vehicle was involved.
ANYONE PINNED IN THE VEHICLE?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes ___ physically pinned ___ jammed doors ___ fire, etc. <input type="checkbox"/> Unknown Detail any entrapment	<input type="checkbox"/> No <input type="checkbox"/> Yes ___ physically pinned ___ jammed doors ___ fire, etc. <input type="checkbox"/> Unknown Detail any entrapment	<input type="checkbox"/> No <input type="checkbox"/> Yes ___ physically pinned ___ jammed doors ___ fire, etc. <input type="checkbox"/> Unknown Detail any entrapment
HOW DID OCCUPANT(S) EXIT THE VEHICLE?	<input type="checkbox"/> Fatal before removed <input type="checkbox"/> Removed while unconscious, or not oriented to time or place <input type="checkbox"/> Removed due to perceived serious injuries <input type="checkbox"/> Exited with some assistance <input checked="" type="checkbox"/> Exited under own power <input type="checkbox"/> Fully ejected <input type="checkbox"/> Unknown	<input type="checkbox"/> Fatal before removed <input type="checkbox"/> Removed while unconscious, or not oriented to time or place <input type="checkbox"/> Removed due to perceived serious injuries <input type="checkbox"/> Exited with some assistance <input type="checkbox"/> Exited under own power <input type="checkbox"/> Fully ejected <input type="checkbox"/> Unknown	<input type="checkbox"/> Fatal before removed <input type="checkbox"/> Removed while unconscious, or not oriented to time or place <input type="checkbox"/> Removed due to perceived serious injuries <input type="checkbox"/> Exited with some assistance <input type="checkbox"/> Exited under own power <input type="checkbox"/> Fully ejected <input type="checkbox"/> Unknown

Further describe any ejection, entrapment, or mobility information here:

AIR BAG INFORMATION

WAS THIS VEHICLE EVER EQUIPPED WITH AN AIR BAG?

☒ YES (IF "YES" COMPLETE THIS SECTION)☐ NO ☐ UNKNOWN (IF "NO" OR "UNKNOWN" SKIP THIS SECTION)

	DRIVER SIDE FRONTAL	PASSENGER SIDE FRONTAL OCCUPANT # ____	"OTHER" AIR BAG SPECIFY: _____ OCCUPANT # ____
VEHICLE BEEN IN ANY PREVIOUS CRASHES? <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES - continue to right <input type="checkbox"/> UNKNOWN - go to box below	<input type="checkbox"/> Prior crash <u>without</u> deployment <input checked="" type="checkbox"/> One prior crash <u>with</u> deployment <input type="checkbox"/> > 1, <u>with</u> at least one deployment <input type="checkbox"/> Previous accident(s) unknown if deployed <u>IF PRIOR DEPLOYMENT</u> <input type="checkbox"/> CHECK IF <u>NOT</u> REINSTALLED	<input type="checkbox"/> Prior crash <u>without</u> deployment <input type="checkbox"/> One prior crash <u>with</u> deployment <input type="checkbox"/> > 1, <u>with</u> at least one deployment <input type="checkbox"/> Previous accident(s) unknown if deployed <u>IF PRIOR DEPLOYMENT</u> <input type="checkbox"/> CHECK IF <u>NOT</u> REINSTALLED	<input type="checkbox"/> Prior crash <u>without</u> deployment <input type="checkbox"/> One prior crash <u>with</u> deployment <input type="checkbox"/> > 1, <u>with</u> at least one deployment <input type="checkbox"/> Previous accident(s) unknown if deployed <u>IF PRIOR DEPLOYMENT</u> <input type="checkbox"/> CHECK IF <u>NOT</u> REINSTALLED
TYPE OF AIR BAG?	<input type="checkbox"/> Original equipment <input type="checkbox"/> Retrofitted <input checked="" type="checkbox"/> Replacement <input type="checkbox"/> Unknown	<input type="checkbox"/> Original equipment <input type="checkbox"/> Retrofitted <input type="checkbox"/> Replacement <input type="checkbox"/> Unknown	<input type="checkbox"/> Original equipment <input type="checkbox"/> Retrofitted <input type="checkbox"/> Replacement <input type="checkbox"/> Unknown
PRIOR SERVICE ON THE AIR BAG SYSTEM?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify: <i>only 6 days old</i>	<input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:	<input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:
DID AIR BAG INFLATE DURING THIS CRASH?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown <input type="checkbox"/> No If "NO" was the wiring disconnected prior to the crash? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	<input type="checkbox"/> Yes <input type="checkbox"/> Unknown <input type="checkbox"/> No If "NO" was the wiring disconnected prior to the crash? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	<input type="checkbox"/> Yes <input type="checkbox"/> Unknown <input type="checkbox"/> No If "NO" was the wiring disconnected prior to the crash? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk
WAS THIS PERSON WEARING ANY TYPE OF EYE-WEAR (EYE/ SUNGLASSES OR CONTACT LENSES) ANY JEWELRY, OR HAVE ANY OBJECTS IN MOUTH OR HAND?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:	<input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:	<input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:
WAS THE AIR BAG IN THIS POSITION CONTACTED BY ANOTHER OCCUPANT?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:	<input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:	<input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Yes - Specify:

Describe any additional information here:

CHILD SAFETY SEAT INFORMATION**WAS THERE A PERSON IN A CHILD SAFETY SEAT IN THIS VEHICLE?**☐ YES (IF "YES" COMPLETE THIS SECTION)☒ NO ☐ UNKNOWN (IF "NO" OR "UNKNOWN" SKIP THIS SECTION)

	DRIVER	OCCUPANT # ____	OCCUPANT # ____
MAKE AND MODEL OF THE SAFETY SEAT?			
TYPE OF SEAT?		<input type="checkbox"/> Infant <input type="checkbox"/> Toddler <input type="checkbox"/> Convertible <input type="checkbox"/> Booster <input type="checkbox"/> Integral <input type="checkbox"/> Other Specify: _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Infant <input type="checkbox"/> Toddler <input type="checkbox"/> Convertible <input type="checkbox"/> Booster <input type="checkbox"/> Integral <input type="checkbox"/> Other Specify: _____ <input type="checkbox"/> Unknown
DIRECTION FACING PRIOR TO THE CRASH?		<input type="checkbox"/> Front <input type="checkbox"/> Rearward <input type="checkbox"/> Unknown	<input type="checkbox"/> Front <input type="checkbox"/> Rearward <input type="checkbox"/> Unknown
VEHICLE'S SEAT BELT USED TO HOLD THE SEAT IN PLACE?		<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown
HOW WAS THE VEHICLE'S SEAT BELT SECURED TO THE CHILD SEAT?		<input type="checkbox"/> Looped through designated rear framing studs <input type="checkbox"/> Looped through arm rest slots <input type="checkbox"/> Belt across safety shield <input type="checkbox"/> Looped through rear frame outside the designated framing struts <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> Looped through designated rear framing studs <input type="checkbox"/> Looped through arm rest slots <input type="checkbox"/> Belt across safety shield <input type="checkbox"/> Looped through rear frame outside the designated framing struts <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Unknown
WHAT WAS THE CHILD SEAT EQUIPPED WITH AT TIME OF PURCHASE?		<input type="checkbox"/> Harness <input type="checkbox"/> Shield <input type="checkbox"/> Tether <input type="checkbox"/> Unknown	<input type="checkbox"/> Harness <input type="checkbox"/> Shield <input type="checkbox"/> Tether <input type="checkbox"/> Unknown
ANY OF THESE ADDED AFTER THEY OWNED THE SAFETY SEAT?		<input type="checkbox"/> Harness <input type="checkbox"/> Shield <input type="checkbox"/> Tether <input type="checkbox"/> None <input type="checkbox"/> Unknown	<input type="checkbox"/> Harness <input type="checkbox"/> Shield <input type="checkbox"/> Tether <input type="checkbox"/> None <input type="checkbox"/> Unknown

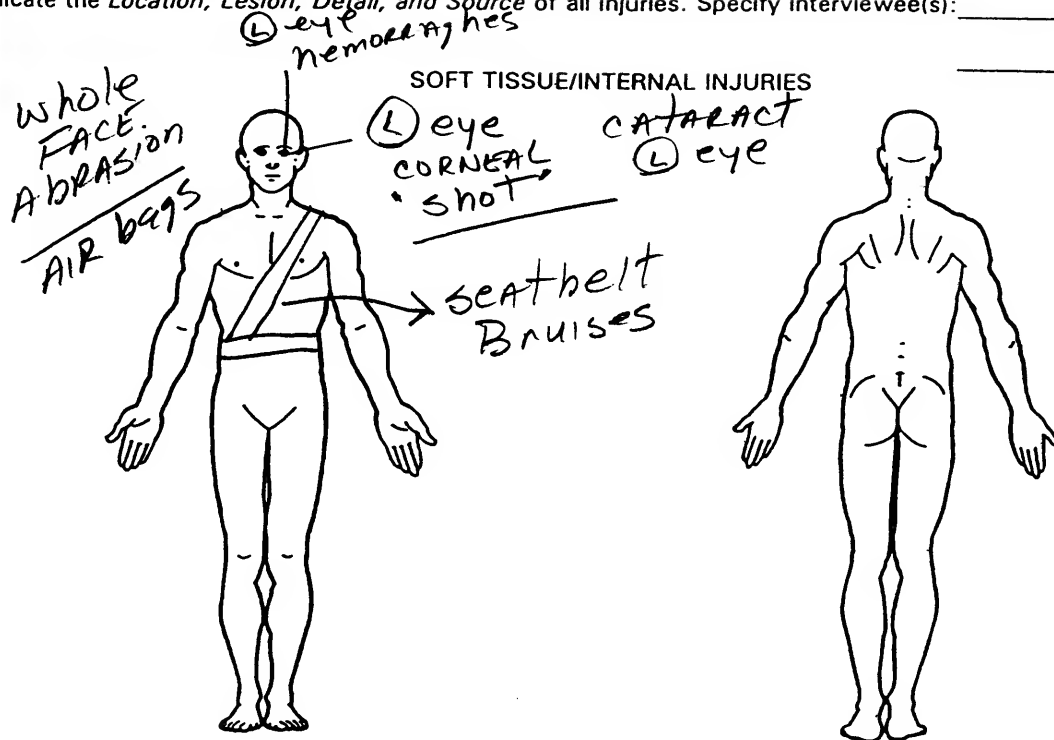
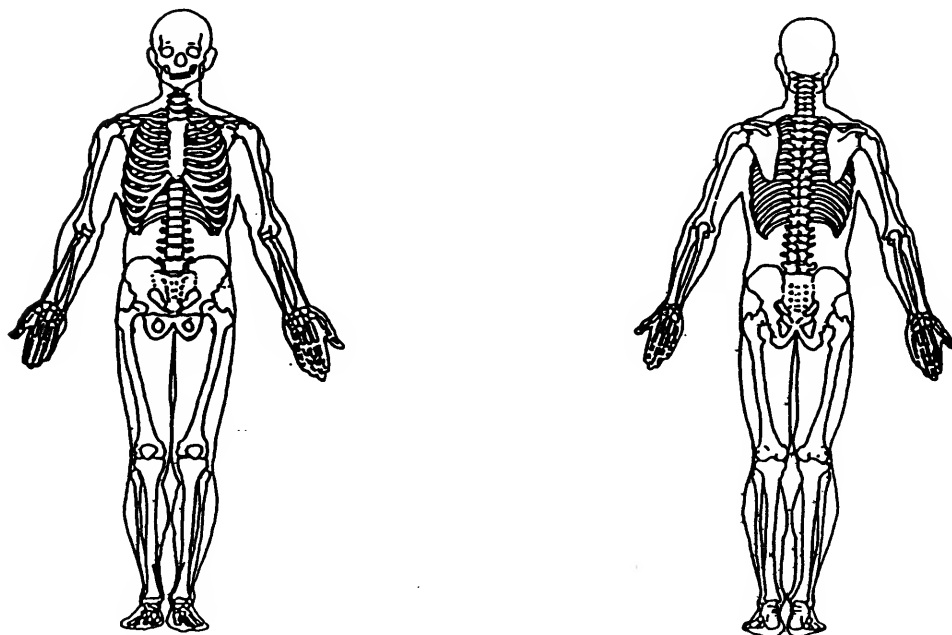
Describe any additional information here:

INJURY INFORMATION

	DRIVER	OCCUPANT # ____	OCCUPANT # ____
WERE YOU INJURED? ▶ If "YES" go to manikin page and record injuries in detail ▶ If "NO" ask next questions	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown
DID YOU HAVE ANY OF THE FOLLOWING: <i>(If any injuries are checked, go to the manikin page and record location, lesion, and source)</i>	<input type="checkbox"/> Cuts <input checked="" type="checkbox"/> Abrasions <input type="checkbox"/> Bruises <input type="checkbox"/> Broken bones <input type="checkbox"/> Head, skull, brain <input type="checkbox"/> Internal injury <input type="checkbox"/> Sprains, strains <input type="checkbox"/> Other - specify on manikin	<input type="checkbox"/> Cuts <input type="checkbox"/> Abrasions <input type="checkbox"/> Bruises <input type="checkbox"/> Broken bones <input type="checkbox"/> Head, skull, brain <input type="checkbox"/> Internal injury <input type="checkbox"/> Sprains, strains <input type="checkbox"/> Other - specify on manikin	<input type="checkbox"/> Cuts <input type="checkbox"/> Abrasions <input type="checkbox"/> Bruises <input type="checkbox"/> Broken bones <input type="checkbox"/> Head, skull, brain <input type="checkbox"/> Internal injury <input type="checkbox"/> Sprains, strains <input type="checkbox"/> Other - specify on manikin
TRANSPORTED DIRECTLY FROM ACCIDENT SCENE FOR TREATMENT?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown
RECEIVE ANY MEDICAL TREATMENT? <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Hospital Trauma Center <input type="checkbox"/> Medical clinic <input type="checkbox"/> Paramedics at scene <input type="checkbox"/> Doctor's office <input type="checkbox"/> Treated by self <input type="checkbox"/> Unknown	<input type="checkbox"/> Hospital <input type="checkbox"/> Medical clinic <input type="checkbox"/> Paramedics at scene <input type="checkbox"/> Doctor's office <input type="checkbox"/> Treated by self <input type="checkbox"/> Unknown	<input type="checkbox"/> Hospital <input type="checkbox"/> Medical clinic <input type="checkbox"/> Paramedics at scene <input type="checkbox"/> Doctor's office <input type="checkbox"/> Treated by self <input type="checkbox"/> Unknown
HOSPITALIZED?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes - # of days 3 DAYS <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes - # of days <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes - # of days <input type="checkbox"/> Unknown
TREATED AND RELEASED FROM THE EMERGENCY ROOM?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown
NAME OF MEDICAL TREATMENT FACILITY?	Hosp.		
RECEIVE ANY FOLLOW-UP TREATMENT?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - describe any additional injuries diagnosed: _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes - describe any additional injuries diagnosed: _____ <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Yes - describe any additional injuries diagnosed: _____ <input type="checkbox"/> Unknown
LOST ANY DAYS FROM WORK OR SCHOOL (COLLEGE) DUE TO THE CRASH?	<input type="checkbox"/> No <input type="checkbox"/> Not working prior to crash <input type="checkbox"/> Yes - # of days 25 <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Not working prior to crash <input type="checkbox"/> Yes - # of days <input type="checkbox"/> Unknown	<input type="checkbox"/> No <input type="checkbox"/> Not working prior to crash <input type="checkbox"/> Yes - # of days <input type="checkbox"/> Unknown
IF REQUIRED: WILL YOU SIGN A MEDICAL RELEASE? * If not an in-person interview, make appointment to have release signed	<input type="checkbox"/> No <input type="checkbox"/> Yes* <input type="checkbox"/> Unknown DATE: NA TIME: _____ PLACE: _____	<input type="checkbox"/> No <input type="checkbox"/> Yes* <input type="checkbox"/> Unknown DATE: _____ TIME: _____ PLACE: _____	<input type="checkbox"/> No <input type="checkbox"/> Yes* <input type="checkbox"/> Unknown DATE: _____ TIME: _____ PLACE: _____

PSU Number 10Case Number—Stratum 9615Vehicle Number 01Occupant Number 01**INJURY DATA FROM INTERVIEWEE(S)**

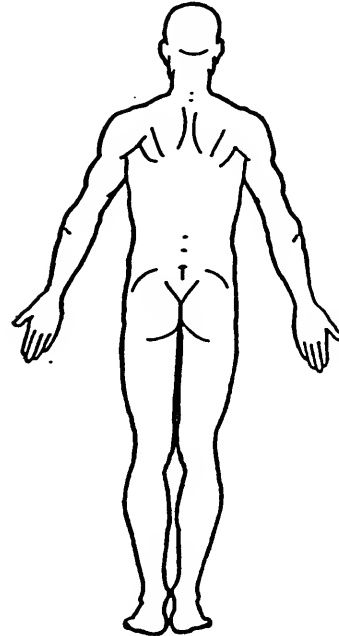
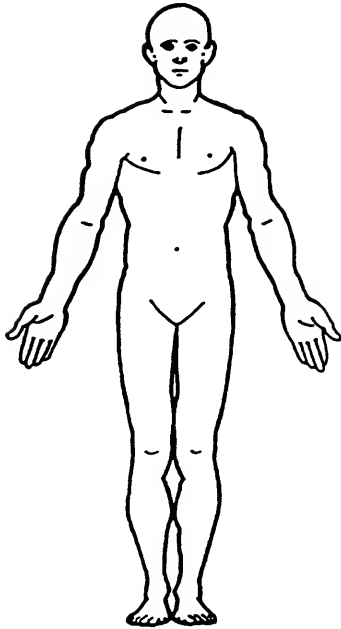
Indicate the Location, Lesion, Detail, and Source of all injuries. Specify interviewee(s): _____

**SKELETAL INJURIES**

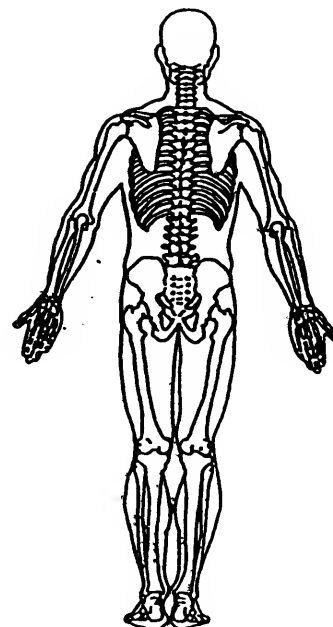
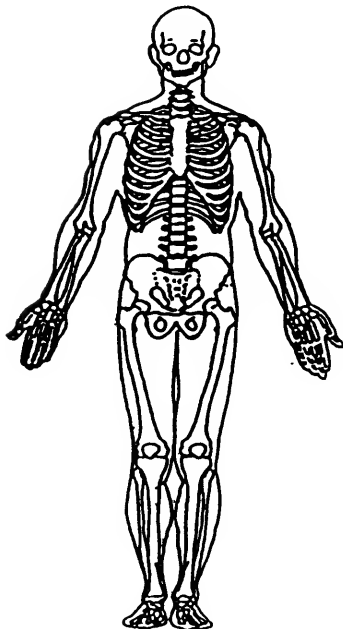
The space provided on the back of this page may be used to further detail injuries noted by the interviewee(s).

PSU Number 10 Case Number—Stratum 96 Vehicle Number _____ Occupant Number _____**INJURY DATA FROM INTERVIEWEE(S)**Indicate the *Location, Lesion, Detail, and Source* of all injuries. Specify interviewee(s): _____

SOFT TISSUE/INTERNAL INJURIES



SKELETAL INJURIES

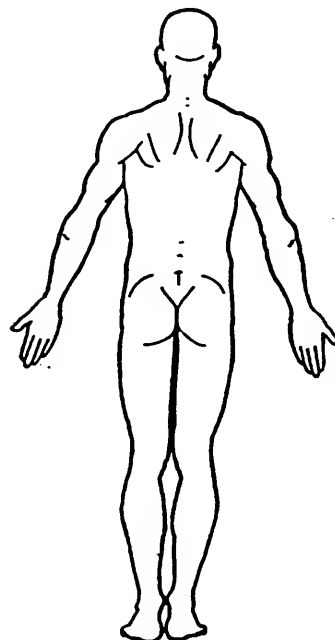
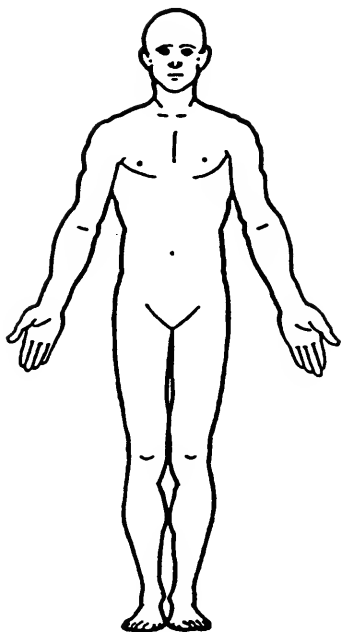
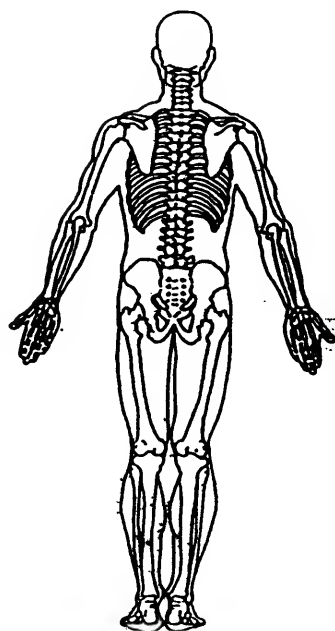
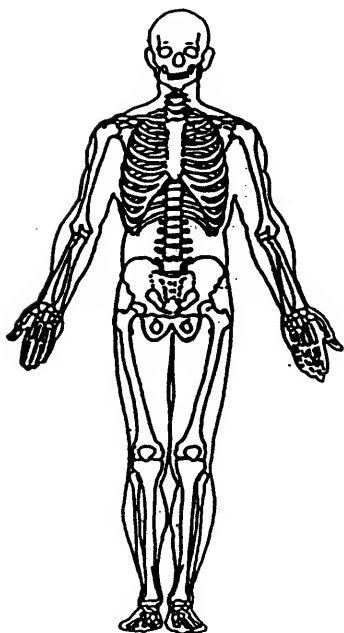


The space provided on the back of this page may be used to further detail injuries noted by the interviewee(s).

PSU Number 10Case Number-Stratum 96

Vehicle Number _____

Occupant Number _____

INJURY DATA FROM INTERVIEWEE(S)Indicate the *Location, Lesion, Detail, and Source* of all injuries. Specify interviewee(s): _____**SOFT TISSUE/INTERNAL INJURIES****SKELETAL INJURIES**

The space provided on the back of this page may be used to further detail injuries noted by the interviewee(s).

NASS CDS OCCUPANT ASSESSMENT FORM:
CASE VEHICLE DRIVER



U.S. Department of Transportation
National Highway Traffic Safety
Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

<p>1. Primary Sampling Unit Number <u>10</u></p> <p>2. Case Number - Stratum <u>9615</u></p> <p>3. Vehicle Number <u>01</u></p> <p>4. Occupant Number <u>01</u></p> <p>OCCUPANT'S CHARACTERISTICS</p> <p>5. Occupant's Age <u>42</u> Code actual age at time of accident. (00) Less than one year old (specify by month): (97) 97 years and older (99) Unknown</p> <p>6. Occupant's Sex <u>2</u> (1) Male (2) Female-not reported pregnant (3) Female-pregnant-1st trimester(1st-3rd month) (4) Female-pregnant-2nd trimester(4th-6th month) (5) Female-pregnant-3rd trimester(7th-9th month) (6) Female-pregnant-term unknown (9) Unknown</p> <p>7. Occupant's Height <u>157</u> Code actual height to the nearest centimeter. (999) Unknown <u>62</u> inches X 2.54 = <u>157</u> centimeters</p> <p>8. Occupant's Weight <u>068</u> Code actual weight to the nearest kilogram. (999) Unknown <u>150</u> pounds X .4536 = <u>68</u> kilograms</p> <p>9. Occupant's Role <u>1</u> (1) Driver (2) Passenger (9) Unknown</p>	<p>OCCUPANT'S SEATING</p> <p>10. Occupant's Seat Position <u>11</u> <i>Front Seat</i> (11) Left side (12) Middle (13) Right side (14) Other (specify): (15) On or in the lap of another occupant</p> <p><i>Second Seat</i> (21) Left side (22) Middle (23) Right side (24) Other (specify): (25) On or in the lap of another occupant</p> <p><i>Third Seat</i> (31) Left side (32) Middle (33) Right side (34) Other (specify): (35) On or in the lap of another occupant</p> <p><i>Fourth Seat</i> (41) Left side (42) Middle (43) Right side (44) Other (specify): (45) On or in the lap of another occupant</p> <p>(97) In or on unenclosed area (98) Other seat (specify): (99) Unknown</p> <p>11. Occupant's Posture <u>0</u> (0) Normal posture</p> <p><i>Abnormal posture</i> (1) Kneeling or standing on seat (2) Lying on or across seat (3) Kneeling, standing or sitting in front of seat (4) Sitting sideways or turned to talk with another occupant or to look out a rear window (5) Sitting on a console (6) Lying back in a reclined seat position (7) Bracing with feet or hands on a surface in front of seat (8) Other abnormal posture (specify): (9) Unknown</p>
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EJECTION/ENTRAPMENT

12. Ejection 0

- (0) No ejection
- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

13. Ejection Area 0

- (0) No ejection
- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear
- (7) Roof
- (8) Other area (e.g., back of pickup, etc.)
(specify): _____
- (9) Unknown

14. Ejection Medium 0

- (0) No ejection
- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify): _____
- (5) Integral structure
- (8) Other medium (specify): _____
- (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0

- (0) No ejection
- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

16. Entrapment 0

- (0) Not entrapped/exit not inhibited
- (1) Entrapped/pinned - mechanically restrained
- (2) Could not exit vehicle due to jammed doors, fire, etc.
(specify): _____
- (9) Unknown

17. Occupant Mobility 4

- (0) Occupant fatal before removed from vehicle
- (1) Removed from vehicle while unconscious or not oriented to time or place
- (2) Removed from vehicle due to perceived serious injuries
- (3) Exited vehicle with some assistance
- (4) Exited vehicle under own power
- (5) Occupant fully ejected
- (8) Removed from vehicle for other reasons
(specify): _____
- (9) Unknown

BELT SYSTEM FUNCTION

18. Manual (Active) Belt System Availability 4

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)
- (8) Other belt (specify):

(9) Unknown

19. Manual (Active) Belt System Use 04

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify):

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat (specify):
- (99) Unknown if belt used

20. Proper Use of Manual (Active) Belts 1

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of manual belt system (specify):

(9) Unknown

21. Manual (Active) Belt Failure Modes During Accident 1

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):

- (6) Broken retractor
- (7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

22. Manual Shoulder Belt Upper Anchorage Adjustment 1

- (0) No manual shoulder belt
- (1) No upper anchorage adjustment for manual shoulder belt

Adjustable shoulder Belt Upper Anchorage

- (2) In full up position
- (3) In mid position
- (4) In full down position
- (5) Position unknown
- (9) Unknown if position has adjustable upper anchorage adjustment

23. Automatic (Passive) Belt System Availability/Function 0

- (0) Not equipped/not available
- (1) 2 point automatic belts
- (2) 3 point automatic belts
- (3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
- (9) Unknown

24. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
- (1) Automatic belt in use
- (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):
- (3) Automatic belt use unknown
- (9) Unknown

25. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
- (1) Non-motorized system
- (2) Motorized system
- (9) Unknown

26. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
- (1) Automatic belt used properly
- (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
- (4) Automatic shoulder belt worn behind back
- (5) Automatic belt worn around more than one person
- (6) Lap portion of automatic belt worn on abdomen
- (7) Automatic lap and shoulder belt or

automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):

(9) Unknown

27. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
- (1) No automatic belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):

- (6) Broken retractor
- (7) Combination of above (specify):
- (8) Other automatic belt failure (specify):

(9) Unknown

POLICE REPORTED RESTRAINT USE

28. Police Reported Belt Use 4

- (0) None used
- (1) Police did not indicate belt use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Automatic belt
- (8) Other type belt, (specify):

(9) Police indicated "unknown"

29. Police Reported Air Bag Availability/Function 2

- (0) No air bag available
- (1) Police did not indicate air bag availability/function
- (2) Deployed
- (3) Not deployed
- (4) Unknown if deployed
- (9) Police indicated "unknown"

Check the Primary Source Used In Determining Belt Use.

- ☒ Vehicle inspection
- ☐ Official injury data
- ☐ Driver/occupant interview
- ☐ Other (specify):

☐ Unknown if belt used

AIR BAG SYSTEM FUNCTION

30. Frontal Air Bag System 1

Availability/Function
(This Occupant Position)

- (0) Not equipped/not available
- (1) Air bag

Non-functional

- (2) Air bag disconnected (specify):

- (3) Air bag not reinstalled
- (9) Unknown

31. Frontal Air Bag System Deployment 1

(This Occupant Position)

- (0) Not equipped/not available
- (1) Deployed during accident (as a result of impact)
- (2) Deployed inadvertently just prior to accident
- (3) Deployed, details unknown
- (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (5) Unknown if deployed
- (7) Nondeployed
- (9) Unknown

32. Other Than First Seat Frontal Air Bag 0

Availability/Function

(This Occupant Position)

- (0) Not equipped/not available
- (1) Air bag

Non-functional

- (2) Air bag disconnected (specify):

- (3) Air bag not reinstalled
- (9) Unknown

Specify type of "other" air bag present:

33. Air Bag(s) Deployment, Other Than First Seat Frontal (This Occupant Position) 0

(0) Not equipped with an "other" air bag

- (1) Deployed during accident (as a result of impact)

- (2) Deployed inadvertently just prior to accident

- (3) Deployed, details unknown

- (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)

- (5) Unknown if deployed

- (7) Nondeployed

- (9) Unknown

34. Are There Indications of Air Bag System Failure? 1

(This Occupant Position)

- (0) Not equipped/not available

- (1) No

- (2) Yes (specify):

- (9) Unknown

FIRST SEAT FRONTAL AIR BAG SYSTEM EVALUATION

35. Had Vehicle Been in Previous Accident(s)? 3

- (0) Not equipped/not available
(1) No previous accidents

Yes

- (2) Previous accident(s) without deployment(s)
(3) One previous accident with deployment
(4) More than one previous accident with at least one deployment
(8) Previous accidents, unknown deployment status
(9) Unknown

36. Type of Air Bag 3

- (0) Not equipped/not available
(1) Original manufacturer installed system
(2) Retrofitted air bag
(3) Replacement air bag
(8) Unknown type of air bag
(9) Unknown

37. Had Any Prior Maintenance/Service Been Performed On This Air Bag System? 9

- (0) Not equipped/not available
(1) No prior maintenance
(2) Yes, prior maintenance (specify):
(9) Unknown

38. Air Bag Deployment Accident Event Sequence Number 01

- (00) Not equipped/not available
Code the accident event sequence number that initiated the air bag deployment
(96) Deployed, unknown event
(97) Not deployed
(98) Unknown if deployed
(99) Unknown

39. CDC For Air Bag Deployment Impact 1

- (0) Not equipped/not available
(1) Highest delta V
(2) Second highest delta V
(3) Other non-coded delta V (specify):
(6) Deployed, unknown event
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

40. Longitudinal Component of Delta V For Air Bag Deployment Impact + 0 2 0

- (_000) Not equipped/not available
Code the value of the delta V for the impact that initiated the air bag deployment
(_996) Deployment, unknown longitudinal Delta V
(_997) Not deployed
(_998) Unknown if deployed
(_999) Unknown

41. Did Air Bag Module Cover Flap(s) Open At Designated Tear Points? 2

- (0) Not equipped/not available
(1) No
(2) Yes
(3) Deployed, unknown if flap(s) opened at designated tear points
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

42. Were Air Bag Module Cover Flap(s) Damaged? 1

- (0) Not equipped/not available
(1) No
(2) Yes (specify):
(3) Deployed, unknown if air bag module cover flap(s) damaged
(7) Not deployed
(8) Unknown if deployed
(9) Unknown

43. Was There Damage To The Air Bag? 03

- (00) Not equipped/not available
(01) Not damaged

Yes - Air Bag Damage

- (02) Ruptured
(03) Cut on backside
(04) Torn
(05) Holed
(06) Burned
(07) Abraded
(88) Other damage (specify):

- (95) Damaged, details unknown
(96) Deployed, unknown if damaged
(97) Not deployed
(98) Unknown if deployed
(99) Unknown

FIRST SEAT FRONTAL AIR BAG SYSTEM
EVALUATION *continued*

HEAD RESTRAINT AND SEAT EVALUATION

44. Source of Air Bag Damage 95
- (00) Not equipped/not available
 (01) Not damaged
 (02) Object worn by occupant, (specify): _____
 (03) Object carried by occupant, (specify): _____
 (04) Adaptive/assistive controls, (specify): _____
 (05) Fire in vehicle
 (06) Thermal burns
 (07) Rescue or emergency efforts
 (88) Other damage source (specify): _____
 (95) Damaged, unknown source
 (96) Deployed, unknown if damaged
 (97) Not deployed
 (98) Unknown if deployed
 (99) Unknown

45. Was The Air Bag Tethered? 1
- (0) Not equipped/not available
 (1) No
 (2) Yes (specify number of tether straps): _____

- (3) Deployed, unknown if tethered
 (7) Not deployed
 (8) Unknown if deployed
 (9) Unknown

46. Did The Air Bag Have Vent Ports? 2
- (0) Not equipped/not available
 (1) No
 (2) Yes (specify number of vent ports): 2

- (3) Deployed, unknown if vent ports present
 (7) Not deployed
 (8) Unknown if deployed
 (9) Unknown

47. Was the Air Bag in this Occupant's Position Contacted by Another Occupant? 1
- (0) Not equipped/not available
 (1) No
 (2) Yes (specify): _____

- (3) Deployed, unknown if other occupant contact to air bag
 (7) Not deployed
 (8) Unknown if deployed
 (9) Unknown

48. Was This Occupant Wearing Eye-wear? 1
- (0) Not air bag equipped/air bag not available
 (1) No
 (2) Eyeglasses/sunglasses
 (3) Contact lenses
 (4) Deployed, unknown if eyewear worn
 (7) Not deployed
 (8) Unknown if deployed
 (9) Unknown

49. Head Restraint Type/Damage by Occupant at This Occupant Position 3

- (0) No head restraints
 (1) Integral—no damage
 (2) Integral—damaged during accident
 (3) Adjustable—no damage
 (4) Adjustable—damaged during accident
 (5) Add-on—no damage
 (6) Add-on—damaged during accident
 (8) Other (specify): _____

- (9) Unknown

50. Seat Type (this Occupant Position) 02

- (00) Occupant not seated or no seat
 (01) Bucket
 (02) Bucket with folding back
 (03) Bench
 (04) Bench with separate back cushions
 (05) Bench with folding back(s)
 (06) Split bench with separate back cushions
 (07) Split bench with folding back(s)
 (08) Pedestal (i.e., column supported)
 (09) Box mounted seat (i.e., van type)
 (10) Other seat type (specify): _____

- (99) Unknown

51. Seat Orientation (this Occupant Position) 1

- (0) Occupant not seated or no seat
 (1) Forward facing seat
 (2) Rear facing seat
 (3) Side facing seat (inward)
 (4) Side facing seat (outward)
 (8) Other (specify): _____

- (9) Unknown

52. Seat Track Adjusted Position Prior To Impact 3

- (0) Occupant not seated or no seat
 (1) Non-adjustable seat track

Adjustable Seat Track

- (2) Seat at forward most track position
 (3) Seat between forward most and middle track positions
 (4) Seat at middle track position
 (5) Seat between middle and rear most track positions
 (6) Seat at rear most track position
 (9) Unknown

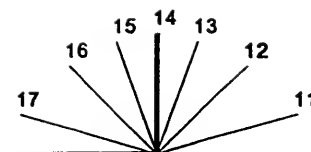
PER interviewee
 visual inspection looked like middle pos. unable to accurately assess since battery cables clipped

HEAD RESTRAINT AND SEAT EVALUATION *continued*53. Seat Back Incline Prior and Post Impact 23

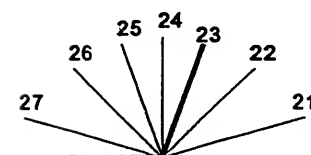
- (00) Occupant not seated or no seat
 (01) Not adjustable

Upright prior to impact

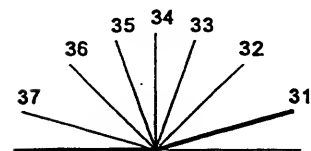
- (11) Moved to completely rearward position
 (12) Moved to rearward midrange position
 (13) Moved to slightly rearward position
 (14) Retained pre-impact position
 (15) Moved to slightly forward position
 (16) Moved to forward midrange position
 (17) Moved to completely forward position

*Slightly reclined prior to impact*

- (21) Moved to completely rearward position
 (22) Moved to rearward midrange position
 (23) Retained pre-impact position
 (24) Moved to upright position
 (25) Moved to slightly forward position
 (26) Moved to forward midrange position
 (27) Moved to completely forward position

*Completely reclined prior to impact*

- (31) Retained pre-impact position
 (32) Moved to rearward midrange position
 (33) Moved to slightly rearward position
 (34) Moved to upright position
 (35) Moved to slightly forward position
 (36) Moved to forward midrange position
 (37) Moved to completely forward position
 (99) Unknown

54. Seat Performance (this Occupant Position) 1

- (0) Occupant not seated or no seat
 (1) No seat performance failure(s)
 (2) Seat adjusters failed
 (3) Seat back folding locks or "seat back" failed
 (specify): _____
 (4) Seat track/anchors failed
 (5) Deformed by impact of occupant
 (6) Deformed by passenger compartment
 intrusion, (specify): _____
 (7) Combination of above (specify): _____
 (8) Other (specify): _____
 (9) Unknown

CHILD SAFETY SEAT

55. Child Safety Seat Make/Model 000

(000) No child safety seat

Applicable codes are found in your NASS CDS
Data Collection, Coding and Editing

(950) Built-in child safety seat

(997) Other make/model (specify):

(998) Unknown make/model

(999) Unknown if child safety seat used

56. Type of Child Safety Seat 0

(0) No child safety seat

(1) Infant seat

(2) Toddler seat

(3) Convertible seat

(4) Booster seat - with shield

(5) Booster seat - without shield

(7) Other type child safety seat (specify):

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

57. Child Safety Seat Orientation 00

(00) No child safety seat

Designed for Rear Facing for This Age/Weight

(01) Rear facing

(02) Forward facing

(08) Other orientation (specify):

(09) Unknown orientation

Designed For Forward Facing for This Age/Weight

(11) Rear facing

(12) Forward facing

(18) Other orientation (specify):

(19) Unknown orientation

*Unknown Design or Orientation For This
Age/Weight, or Unknown Age/Weight*

(21) Rear facing

(22) Forward facing

(28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

58. Child Safety Seat Harness Usage 0059. Child Safety Seat Shield Usage 0060. Child Safety Seat Tether Usage 00Note: Options below applicable to
Variables OA58-OA60.

(00) No child safety seat

Not Designed With Harness/Shield/Tether(01) After market harness/shield/tether
added, not used

(02) After market harness/shield/tether used

(03) Child safety seat used, but no after market
harness/shield/tether added(09) Unknown if harness/shield/tether
added or used*Designed With Harness/Shield/Tether*

(11) Harness/shield/tether not used

(12) Harness/shield/tether used

(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

(21) Harness/shield/tether not used

(22) Harness/shield/tether used

(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES**61. Injury Severity (Police Rating)**1

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

62. Treatment - Mortality3

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease (specify):

Nonfatal

- (3) Hospitalization
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later
- (7) Treatment - other (specify):
- (8) Transported to a medical facility-unknown if treated
- (9) Unknown

63. Type Of Medical Facility (for Initial Treatment)1

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):

(9) Unknown

64. Hospital Stay03

(00) Not Hospitalized

Code the number of days (up through 60) that the occupant stayed in hospital.

- (61) 61 days or more
- (99) Unknown

65. Working Days Lost25

Code the number of days (up through 60) that the occupant lost from work due to the accident

- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

up to 96

STOP WORK HERE**VARIABLES 66-74****TO BE CODED BY THE ZONE CENTER**

TO BE CODED BY THE ZONE CENTER**INJURY CONSEQUENCES****66. Time to Death** 00

Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)

- (00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

67. 1st Medically Reported Cause of Death 00**68. 2nd Medically Reported Cause of Death** 00**69. 3rd Medically Reported Cause of Death** 00

Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death

- (00) Not fatal or no additional causes
(96) Mode of death given but specific injuries are not linked to cause of death. (specify):

(97) Other result (includes fatal ruled disease) (specify):

(99) Unknown

70. Number of Recorded Injuries for This Occupant 12

Code the actual number of injuries recorded for this occupant.

- (00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

TRAUMA DATA**71. Glasgow Coma Scale (GCS) Score** 15
(at Medical Facility)

- (00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

72. Was the Occupant Given Blood? 1

- (1) No - blood not given
(2) Yes - blood given
(specify units):
(9) Unknown if blood given

73. Arterial Blood Gases (ABG) - HCO₃ 01

- (00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO₃
(96) ABGs reported, HCO₃ unknown
(97) Injured, details unknown
(99) Unknown if injured

BELT USE DETERMINATION**74. Primary Source of Belt Use Determination** 1
(0) Not equipped/not available/destroyed or rendered inoperative

- (1) Vehicle inspection
(2) Official injury data
(3) Driver/occupant interview
(8) Other (specify):
(9) Unknown if belt used

NASS CDS OCCUPANT INJURY FORM:
CASE VEHICLE DRIVER



U.S. Department of Transportation
National Highway Traffic Safety
Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021
NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

10

3. Vehicle Number

01

2. Case Number - Stratum

9615

4. Occupant Number

01

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

Source of Injury Data	Body Region	A.I.S. - 90				Injury Source	Injury Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number			
		Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity							
Hyphema (1) Cornea	1st	5. <u>2</u>	6. <u>2</u>	7. <u>4</u>	8. <u>06</u>	9. <u>04</u>	10. <u>1</u>	11. <u>2</u>	12. <u>170</u>	13. <u>1</u>	14. <u>1</u>	15. <u>00</u>
Abrasion (2) Cornea	2nd	16. <u>2</u>	17. <u>2</u>	18. <u>4</u>	19. <u>06</u>	20. <u>02</u>	21. <u>1</u>	22. <u>2</u>	23. <u>170</u>	24. <u>1</u>	25. <u>1</u>	26. <u>00</u>
Conjunctiva (3) Injury	3rd	27. <u>2</u>	28. <u>2</u>	29. <u>4</u>	30. <u>04</u>	31. <u>16</u>	32. <u>1</u>	33. <u>2</u>	34. <u>170</u>	35. <u>1</u>	36. <u>1</u>	37. <u>00</u>
Vitreous (4) hemorrhage	4th	38. <u>2</u>	39. <u>2</u>	40. <u>4</u>	41. <u>16</u>	42. <u>99</u>	43. <u>1</u>	44. <u>2</u>	45. <u>170</u>	46. <u>1</u>	47. <u>1</u>	48. <u>00</u>
Abrasions (5) periorbital	5th	49. <u>2</u>	50. <u>2</u>	51. <u>9</u>	52. <u>72</u>	53. <u>02</u>	54. <u>1</u>	55. <u>2</u>	56. <u>170</u>	57. <u>1</u>	58. <u>1</u>	59. <u>00</u>
Contusion (6) periorbital	6th	60. <u>2</u>	61. <u>2</u>	62. <u>9</u>	63. <u>72</u>	64. <u>04</u>	65. <u>1</u>	66. <u>2</u>	67. <u>170</u>	68. <u>1</u>	69. <u>1</u>	70. <u>00</u>
Abrasion (7) forehead	7th	71. <u>3</u>	72. <u>2</u>	73. <u>9</u>	74. <u>02</u>	75. <u>02</u>	76. <u>1</u>	77. <u>7</u>	78. <u>170</u>	79. <u>1</u>	80. <u>1</u>	81. <u>00</u>
Abrasion (8) chin	8th	82. <u>3</u>	83. <u>2</u>	84. <u>9</u>	85. <u>02</u>	86. <u>02</u>	87. <u>1</u>	88. <u>8</u>	89. <u>170</u>	90. <u>1</u>	91. <u>1</u>	92. <u>00</u>
Contusion (9) chest	9th	93. <u>2</u>	94. <u>4</u>	95. <u>9</u>	96. <u>04</u>	97. <u>02</u>	98. <u>1</u>	99. <u>2</u>	100. <u>152</u>	101. <u>1</u>	102. <u>1</u>	103. <u>00</u>
Contusion (10) Abdomen	10th	104. <u>7</u>	105. <u>5</u>	106. <u>9</u>	107. <u>04</u>	108. <u>02</u>	109. <u>1</u>	110. <u>8</u>	111. <u>152</u>	112. <u>2</u>	113. <u>1</u>	114. <u>00</u>

OCCUPANT INJURY DATA	
1. OCCUPANT TYPE	DRIVER
2. OCCUPANT POSITION	SEATBELT
3. OCCUPANT INJURY	NO INJURY
4. OCCUPANT INJURY DESCRIPTION	
5. OCCUPANT INJURY SEVERITY	
6. OCCUPANT INJURY LOCATION	
7. OCCUPANT INJURY MECHANISM	
8. OCCUPANT INJURY EVIDENCE	
9. OCCUPANT INJURY INVESTIGATION	
10. OCCUPANT INJURY REPORT	
11. OCCUPANT INJURY RECORD	
12. OCCUPANT INJURY ANALYSIS	
13. OCCUPANT INJURY PREVENTION	
14. OCCUPANT INJURY RESEARCH	
15. OCCUPANT INJURY LEGISLATION	
16. OCCUPANT INJURY STANDARDS	
17. OCCUPANT INJURY TESTING	
18. OCCUPANT INJURY EVALUATION	
19. OCCUPANT INJURY IMPROVEMENT	
20. OCCUPANT INJURY FUTURE	

[illegible]

OCCUPANT INJURY CLASSIFICATION

Body Region	Specific Anatomic Structure	Level of Injury	Aspect
(1) Head		Specific injuries are assigned consecutive two-digit numbers beginning with 02.	(1) Right
(2) Face			(2) Left
(3) Neck	<u>Vessels, Nerves, Organs, Bones, Joints</u> are assigned consecutive two digit numbers beginning with 02.		(3) Bilateral
(4) Thorax			(4) Central
(5) Abdomen			(5) Anterior
(6) Spine			(6) Posterior
(7) Upper Extremity			(7) Superior
(8) Lower Extremity			(8) Inferior
(9) Unspecified	The exceptions to this rule apply to:		(9) Unknown
			(0) Whole region
Type of Anatomic Structure	<u>Whole Area</u>		
(1) Whole Area	(02) Skin - Abrasion		
(2) Vessels	(04) Skin - Contusion		
(3) Nerves	(06) Skin - Laceration		
(4) Organs (includes Muscles/ligaments)	(08) Skin - Avulsion		
(5) Skeletal (includes joints)	(10) Amputation		
(6) Head - LOC	(20) Burn		
(9) Skin	(30) Crush		
	(40) Degloving		
	(50) Injury - NFS		
	(90) Trauma, other than mechanical		
	<u>Head - LOC</u>		
	(02) Length of LOC		
	(04) Level		
	(06) of		
	(08) Consciousness		
	(10) Concussion		
	<u>Spine</u>		
	(02) Cervical		
	(04) Thoracic		
	(06) Lumbar		

Abbreviated Injury Scale

- (1) Minor Injury
 (2) Moderate Injury
 (3) Serious Injury
 (4) Severe Injury
 (5) Critical Injury
 (6) Maximum (untreatable)
 (7) Injured, unknown severity

SOURCE OF INJURY DATA**INJURY SOURCE****DIRECT/INDIRECT INJURY****CONFIDENCE LEVEL****OFFICIAL RECORDS**

- (1) Autopsy records with or without hospital/medical records
 (2) Hospital/medical records other than emergency room (e.g., discharge summary)
 (3) Emergency room records only (including associated X-rays or other lab reports)
 (4) Private physician, walk-in or emergency clinic

UNOFFICIAL RECORDS

- (5) Lay coroner report
 (6) E.M.S. personnel
 (7) Interviewee
 (8) Other source (specify):
 (9) Police

- (1) Certain
 (2) Probable
 (3) Possible
 (9) Unknown

- (1) Direct contact injury
 (2) Indirect contact injury
 (3) Noncontact injury
 (7) Injured, unknown source

OFFICIAL INJURY DATA — SOFT TISSUE INJURIES

Air Bag Deployment

ET, EN, DS, HP
PN, CN

Restrained?

— No

✓ Yes

(ET, EN, HP)

Blood Alcohol Level
(mg/dl)BAL = Not
Tested (HP)Glasgow Coma
Scale ScoreGCSS = 15
(ET, HP)Units of Blood
GivenUnits =

Arterial Blood Gases

pH = PO₂ = PCO₂ = HCO₃ = Seatbelted
(ET)

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

• Air Bag Injury
(PN)• Steering wheel or windshield damage
(ET)• Discharge
from nose or
ears (ET, HP)• Pieces of foreign body
in eye conjunctiva (PN)• Hyphema
(ET)• c/o pain eye
side of
face
(EN)• Chest soreness
2° to seat belt
bruise
(PN)• Abrasion eye side of forehead (EN)
• c/o pain eye side face (ET)• eye swelling + swollen
shut (ET, EN, DS, HP, PN)

• Abrasion around

• eye

• EET, DS, HP, PN, CN retina

• corneal abrasion (PN)

• Abrasion chin

(EN)

• Tenderness anterior chest (PN)

• Blunt chest trauma,
tenderness sternal
area (DS)• Chest wall
injuries
(DS)• Laceration hand, web
space
(HP)• Abrasion eyelid
(PN)• Superficial laceration
upper eyelid (PN)

(DS, PN, CN)

(DS, PN, CN)

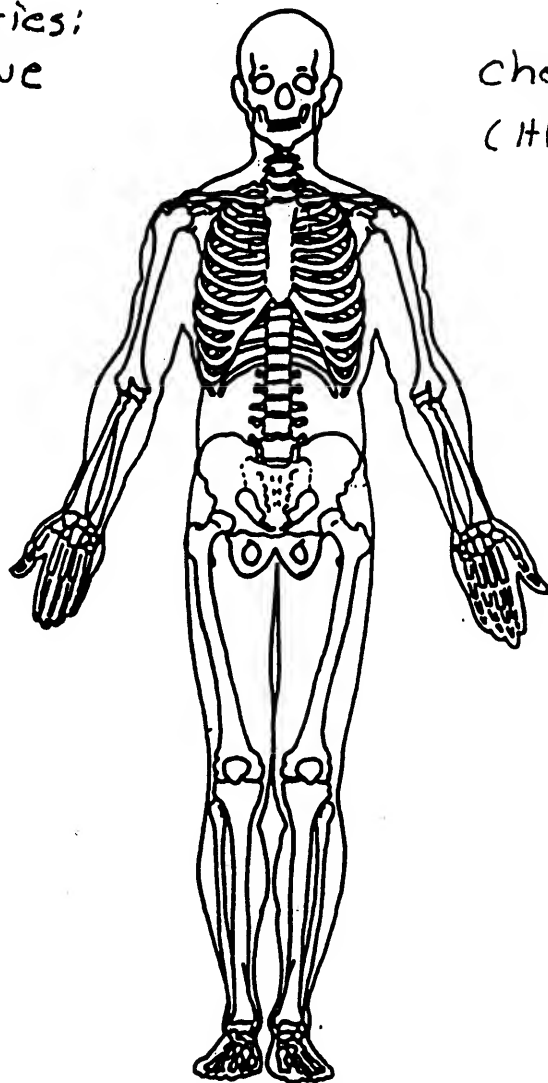
(DS, PN, CN)

** This injury was most likely
an abrasion based on the
summary within the record-SCI* 7.5 x 8.4 mm defect
(DS)

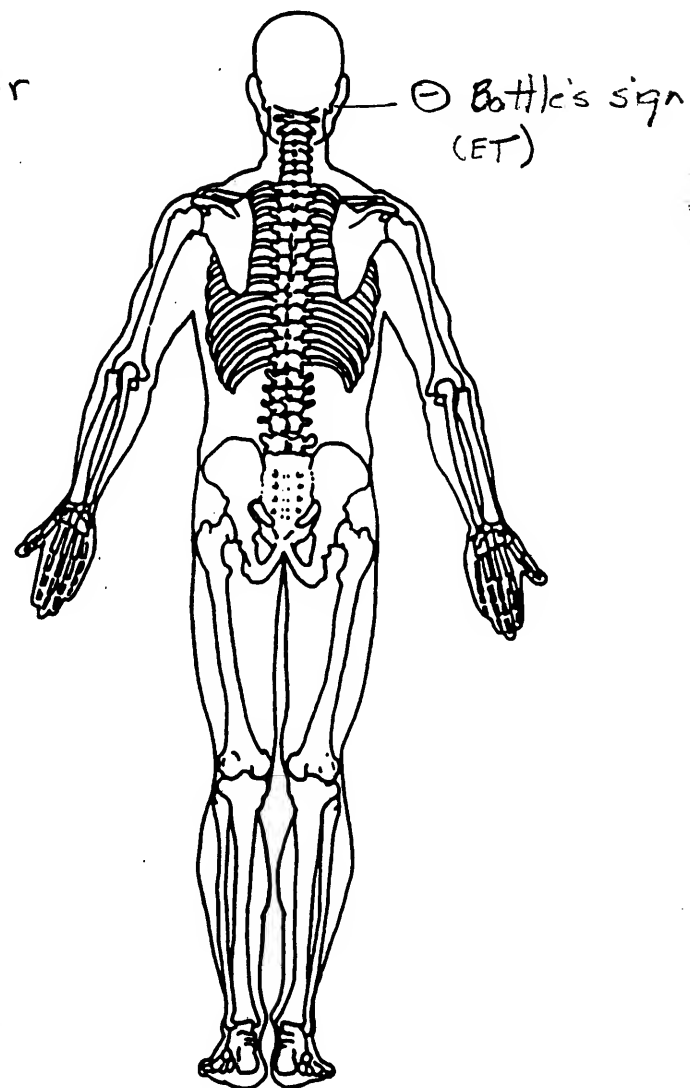
OFFICIAL INJURY DATA — SKELETAL INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

Facial Series:
Negative
(HP, EX)



chest: clear
(HP)



INJURY SOURCES

FRONT

- (001) Windshield
- (002) Mirror
- (003) Sunvisor
- (004) Steering wheel rim
- (005) Steering wheel hub/spoke
- (006) Steering wheel (combination of codes 004 and 005)
- (007) Steering column, transmission selector lever, other attachment
- (008) Cellular telephone or CB radio
- (009) Add on equipment (e.g., tape deck, air conditioner)
- (010) Left instrument panel and below
- (011) Center instrument panel and below
- (012) Right instrument panel and below
- (013) Glove compartment door
- (014) Knee bolster
- (015) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (016) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (017) Windshield reinforced by exterior object (specify): _____
- (019) Other front object (specify): _____

LEFT SIDE

- (051) Left side interior surface, excluding hardware or armrests
- (052) Left side hardware or armrest
- (053) Left A (A1/A2)-pillar
- (054) Left B-pillar
- (055) Other left pillar (specify): _____
- (056) Left side window glass
- (057) Left side window frame
- (058) Left side window sill
- (059) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (060) Other left side object (specify): _____

RIGHT SIDE

- (101) Right side interior surface, excluding hardware or armrests

- (102) Right side hardware or armrest
- (103) Right A (A1/A2)-pillar
- (104) Right B-pillar
- (105) Other right pillar (specify): _____
- (106) Right side window glass
- (107) Right side window frame
- (108) Right side window sill
- (109) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (110) Other right side object (specify): _____

INTERIOR

- (151) Seat, back support
- (152) Belt restraint webbing/buckle
- (153) Belt restraint B-pillar or door frame attachment point
- (154) Other restraint system component (specify): _____
- (155) Head restraint system
- (160) Other occupants (specify): _____
- (161) Interior loose objects
- (162) Child safety seat (specify): _____
- (163) Other interior object (specify): _____

AIR BAG

- (170) Air bag-driver side
- (171) Air bag-driver side and eyewear
- (172) Air bag-driver side and jewelry
- (173) Air bag-driver side and object held
- (174) Air bag-driver side and object in mouth
- (175) Air bag compartment cover-driver side
- (176) Air bag compartment cover-driver side and eyewear
- (177) Air bag compartment cover-driver side and jewelry
- (178) Air bag compartment cover-driver side and object held
- (179) Air bag compartment cover-driver side and object in mouth
- (180) Air bag-passenger side
- (181) Air bag-passenger side and eyewear
- (182) Air bag-passenger side and jewelry

- (183) Air bag-passenger side and object held
- (184) Air bag-passenger side and object in mouth
- (185) Air bag compartment cover-passenger side
- (186) Air bag compartment cover-passenger side and eyewear
- (187) Air bag compartment cover-passenger side and jewelry
- (188) Air bag compartment cover-passenger side and object held
- (189) Air bag compartment cover-passenger side and object in mouth
- (190) Other air bag (specify): _____
- (195) Other air bag compartment cover (specify): _____

ROOF

- (201) Front header
- (202) Rear header
- (203) Roof left side rail
- (204) Roof right side rail
- (205) Roof or convertible top

FLOOR

- (251) Floor (including toe pan)
- (252) Floor or console mounted transmission lever, including console
- (253) Parking brake handle
- (254) Foot controls including parking brake

REAR

- (301) Backlight (rear window)
- (302) Backlight storage rack, door, etc.
- (303) Other rear object (specify): _____

ADAPTIVE (ASSISTIVE) DRIVING EQUIPMENT

- (401) Hand controls for braking/acceleration
- (402) Steering control devices (attached to OEM steering wheel)
- (403) Steering knob attached to steering wheel
- (405) Replacement steering wheel (i.e., reduced diameter)
- (406) Joy stick steering controls
- (407) Wheelchair tie-downs
- (408) Modification to seat belts, (specify): _____
- (409) Additional or relocated switches, (specify): _____

- (410) Raised roof

- (411) Wall mounted head rest lused behind wheel chair)
- (412) Other adaptive device (specify): _____

EXTERIOR of OCCUPANT'S VEHICLE

- (451) Hood
- (452) Outside hardware (e.g., outside mirror, antenna)
- (453) Other exterior surface or tires (specify): _____
- (454) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE

- (501) Front bumper
- (502) Hood edge
- (503) Other front of vehicle (specify): _____
- (504) Hood
- (505) Hood ornament
- (506) Windshield, roof rail, A-pillar
- (507) Side surface
- (508) Side mirrors
- (509) Other side protrusions (specify): _____
- (510) Rear surface
- (511) Undercarriage
- (512) Tires and wheels
- (513) Other exterior of other motor vehicle (specify): _____
- (514) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT

- (551) Ground
- (598) Other vehicle or object (specify): _____
- (599) Unknown vehicle or object

NONCONTACT INJURY

- (601) Fire in vehicle
- (602) Flying glass
- (603) Other noncontact injury source (specify): _____
- (604) Air bag exhaust gases
- (697) Injured, unknown source

OFFICIAL INJURY DATA — INTERNAL INJURIES

Hospitalized 3 days for management of hyphema (DS,PN,CN)

Ambulatory @ Scene (ET)

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

• ⊖ blurred vision (ET)

• CN II - XII intact (DS,PN)

• Hippus on pupillary exam - 1st day (DS)

• Trace APD versus hippus - 2nd day, and 4th day (DS,PN)

• Definite early cataract formation, traumatic (DS,PN)

• ⊖ LOC (ET,HP)

• Ax 0 x 3 (ET,HP,PN)

• ⊖ Numbness or tingling to hands or feet (ET)

• No neurological defects (PN)

• Distorted pupil @ eye (DS,PN)

• ① periorbital ecchymosis/contusion (DS,PN,CN)

• ② cornea, 80-90% epithelial defect (DS,PN)

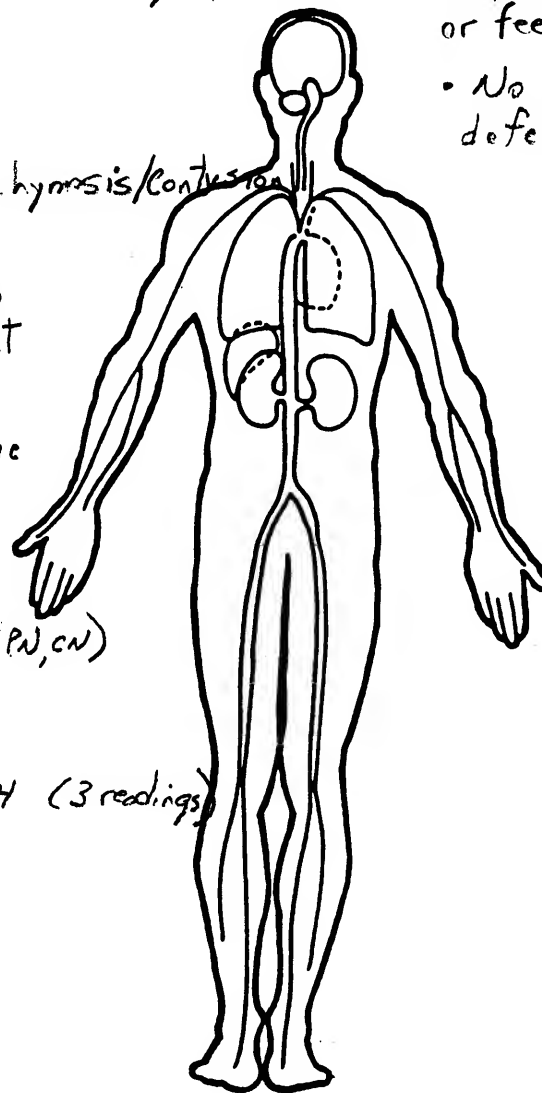
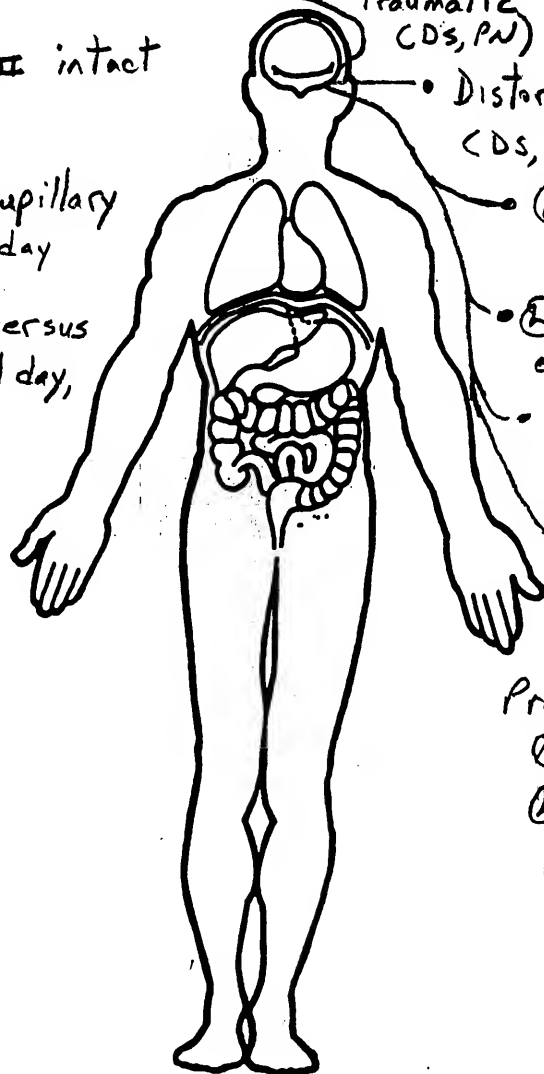
• Small vitreous hemorrhage @ eye (DS,PN,CN)

• Conjunctival chemosis and hemorrhage (PN,CN)

Pressure:

• ① eye = 23

• ② eye = 12, 10, 14 (3 readings) (DS,PN,CN)



APD

CAUSE OF DEATH

ICD-9-CM

(PA) 921.3 Contusion eyeball (commotio Retina) (CW)
 (PA) 364.76 Iridodialysis (CW)
 (PA) 921.2 Contusion periorbital
 (PA) 379.23 Vitreous hemorrhage (CW)
 (PA) 366.20 Traumatic Cataract, NOS
 (PA) 371.20 Corneal Edema, NOS 364.41 Hyphema (CW)

OTHER DRUGS (GV16)

Specimen Test Type	Drug(s)	Drug Type
<input type="checkbox"/> Blood and urine tests <input type="checkbox"/> Blood test only <input type="checkbox"/> Urine test only <input type="checkbox"/> Other test <input type="checkbox"/> Unspecified		

MEDICAL RECORD ABBREVIATIONS

Symbol	Record Type Description
A	Autopsy—medical information based upon an invasive examination of a body
ME	Medical examiner's record—where the information reported on the patient is based on a non-invasive examination of the body
AR	Admission record/summary—any medical information on this record should be considered as post-ER since it summarizes the patient's admission; these records are common in short hospitalizations and usually only contain: admission DX(s), final DX(s), and a listing of surgical treatments; ICD-9-CM codes are frequently available.
FS	Admission/discharge face sheet—face sheets are essentially the same as admission record/summaries and contain the same types of information as discussed above
DS	Discharge summary—shorten history of a patient's hospitalization highlighting the patient's major injuries; this record is often written from the perspective of its author which in many cases is a consultant
OS	Operative record—summary of a performed surgical operation often providing detailed information about a specific trauma; patients who survive the surgery are normally admitted; thus, this record is normally considered post-ER; however, if this record results from an outpatient surgery, then treat it as emergency-room related
FX	Radiographic records—taken after the patient has been admitted, or while in surgery or intensive care or physician
PN	Patient progress notes—supplemental record containing additional <u>nurses</u> notes taken after the patient's admission
HP	History and physical exam—medical history and the results of the physical exam obtained by the emergency room physician assigned to the patient upon arrival at the emergency room
CN	Consultation record—consultations are in essence additional history and physical exams performed by doctors whose expertise was requested by the emergency room physician; the consultation may occur during the emergency room visit or after admission
ER	Emergency room report—where the author of this information is undefined
EN	Emergency room nurse—"nurse/complaint of" section on the emergency room report
ED	Emergency room doctor—"objective/physical exam" section plus "diagnosis and treatment" sections (i.e., doctor portion of emergency room report)
NN	Nurse notes—supplemental record containing additional notes taken by the emergency room nurse(s)
EX	Radiographic records—taken during the patients stay in the emergency room
CV	Coroner's verdict—statement of cause of death for legal specific regarding injuries; care must be exercised to ascertain the credentials of the verdict's author.
CR	Coroner's report—medical information based upon a noninvasive examination performed by a person who is not a doctor but who has the title of a coroner
ET	Emergency medical technician—report by a person who qualifies as an emergency medical services technician (EMS or EMT)
O	Other source—medical information based on an other source (e.g., newspaper, DVM—Doctor of Veterinary Medicine)

PA = Physician Attestation Statement

EMS PATIENT FORM 1/96

Date: 9/6 Unit(s) #: _____ Shift: A B D Call Dispatched as: MVA
 Location: _____ EMS Case #: _____ Police / Sheriff On Scene Requested
 Dispatched: 1551 Pt. Contacted: 1559 96 Hosp.: 1630 Fire Unit(s): _____ Poison Control: _____
 Aid BP ☒ Refusal ☒ (transport) Code: II Hospital: _____ Physician Contacted (circle): 892 895 893 891 894 NONE

EMT-P Completing report: _____ Badge #: _____ Other: _____
 EMT-P: _____ Badge #: _____
 Name: _____ Sex: M F Age: _____ DOB: _____ Race: Hispanic
 Address: _____ City: _____ State: _____ Zip: _____ Black Asian
 Phone: _____ SSN / MEP / TOL: _____ Pts. Doctor _____ Native American
 Responsible Adult: _____ Relationship: _____ Caucasian Other

Patient's Major Problem: MVA Duration: 10 MIN

Initial vital signs: Time 1601; BP: 142/90; P: 96; RR: 18; Temp.: _____; Position: Lying Sitting Standing

Eye Opening Verbal Response Best Motor Response Glasgow Scale
 4 Spontaneous 2 To pain + 5 Oriented x 3 2 Incomprehensible + 6 Obeys commands 3 Flexion to pain = Coma 15 15
 3 To noise, voice 1 none + 4 Confused Sounds 5 Localizes pain 2 Extension to pain = Scale At 1605 At 1649
 3 Inappropriate 1 None 4 Withdrawal 1 None

Pupils: RIGHT: Reactive Unreactive Dilated Mid Constricted Breath Left: CTA Decreased Rales Wheezes Absent
 LEFT: Reactive Unreactive Dilated Mid Constricted Sounds Right: CTA Decreased Rales Wheezes Absent

Skin: Warm Cool Pale Hot Dry Moist Cyanotic Flushed Respiratory Effort: WNL Shallow Absent Labored Agonal

Bleeding: None Minimal Moderate Severe Pain: 3 (0 to 10) None = 0 10 = Severe

PMHx (circle): HTN, DM, Cig. MOI (circle choice): MVA MVP Steering wheel damaged: Y N Windshield damaged: Y N
 ETOH, Hi. Chol., MI, CHF, CVA, MCA, Industrial Accident Signif. interior damage: Y N Signif. exterior damage: Y N
 Renal, COPD, Asthma, Cancer, Fall, GSW, Stab, Assault, Seat Belt Used: N Air Bag Present: Y N Deployed: Y N
 Bleeding Problems, Seizures, Burn, Bite(s), Poisoning, Helmet Worn: Y N Patient thrown: Y, _____ ft: N
 Liver Disease, Other: _____ Other: _____ Comments: _____

Pl. Immobilized? Y N Position: Lying Sitting Standing Equipment: KED Collar Board Scoop Head Blocks

Patient Medications: _____ Drug Allergies: Sub E drugs

Illness or Injury Narrative (not noted elsewhere): YOF A/O X 3 sitting in back seat of a person's car upon EMS arrival. Pt was driver of car going around turn 30 mph. + car slid into guardrail hitting front end of car. Moderate damage front end of car. Steering wheel & windshield damage. E.O.C. present. Pt. at pt. to C. side face. Swelling around C. eye. Day swollen shut. Pt. walked from her car to other person's car. Discharge from nose & ears. Bubbles sign. Abrasion around C. eye. Blurred vision. Immobilized from sitting pos. Pt. Ambulatory before EMS arrival. Hypertension.

Oxygen: 15 L/min (circle) Nasal Can. Face Mask Oral AWW Nasal AWW BVM ATV

Other Services: PASG Bandaging Burn Sheet CPR Splinting Extrication Ice Pack

OB Kit Suction Cardiac Monitor AED TCP (R=____ mA=____ Capture Y-N)

TIME →	1610				TIME →				
BP	<u>42/10</u>				Epinephrine IV ET SQ				
Pulse	<u>94</u>				Lidocaine IV ET				
Resp	<u>18</u>				Atropine IV ET to hands on feet				
Pulse Ox	<u>96% C²</u>				Aspirin				
EKG Rhythm	<u>ST</u>				Shocks				
Chemstrip									
Albuterol Tx.									
Dextrose									
NTG					Combitube ET: _____ mm BBS Chest rise Vapor in Tube IV RS _____ Ga. IV NS _____ Ga.				

Patient's condition on arrival at Emergency Dept.: Improved Unchanged Worsened

Patient's care transferred to (circle): Physician or RN. Name (print): _____

I was advised by a certified paramedic that I am in need of medical treatment, but I choose not to accept emergency medical treatment and/or transportation. I have been informed of the possible consequences of this action.

Signature: _____ Witness: _____

Fui avisado por un Paramédico Certificado de la necesidad de tratamiento médico, pero escogí no aceptar tratamiento médico de emergencia o transporte.

Firma: _____ Testigo: _____

I authorize the release of any medical information necessary to EMS or their agent and I also authorize payment of government benefits or private insurance benefits to the EMS for Services rendered. I fully understand that all balances not covered by insurance will be paid in full according to the policies of the City of San Antonio.

Signature: Pt immobilized

Autorizo que EMS o su agente obtengan toda información médica que sea necesario y también autorizo pago de beneficios de gobierno o beneficios de seguro privada a EMS por sus servicios. Comprendo que balances que no están cubiertos por seguro deben ser pagados en total bajo las pólizas de la ciudad de San Antonio.

Firma: _____

NAME _____ DATE: 7/1
AGE: _____ SEX: ☒ F ☐ M MEANS OF ARRIVAL: EMS
☐ EMERGENCY ☐ SURGENT ☐ EXPEDITE ☐ NONURGENT
☐ C--collar ☐ Spine ☐ Ambulatory ☐ W/C
☐ Backboard ☐ Splint ☐ Stretcher ☐ EMS
☐ Special Needs: ☐ Carried ☐ Other: _____

4E: Chief Complaint: S/P MVA Other Pertinent Data: _____
 100 Returned by: ☐ M.D. ☐ Clinic/Hosp. _____ Brady-Green/Service _____ Other _____
 Plan after triage: ☐ FWR ☐ REGISTRATION ☐ SCREENING ☐ MODULE ☐ OTHER _____
 Treatment Area: ☐ MED. ☐ SURG. ☐ ORTHO ☐ OB/GYN ☐ NP ☐ PEDI ☐ URGENT CARE RN SIGNATURE: _____

NE	Assessment: pt 3/10 MVA, dusky in lower 1/3 and mid into a side rail. pt was then lower restrained @ air by AT & TOX3 MAE equally PERL, BBS CT & slow white pink. Abrogant noted on chain's, 1 side of forehead + L periorbital edema. pt 1/10 pain R side of face.
No over	

Last EO/Clinic Visit: _____ TREATMENT PTA: _____

<input checked="" type="checkbox"/> Skin	<input type="checkbox"/> Skin Temp.	<input type="checkbox"/> Color	<input type="checkbox"/> Allergies: <u>Mushpa</u>		<u>Forehead</u>
<input checked="" type="checkbox"/> Normal	<input checked="" type="checkbox"/> Normal	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> LUMP: _____		<input type="checkbox"/> Confirm
<input type="checkbox"/> Dry	<input type="checkbox"/> Hot	<input type="checkbox"/> Pale	<input type="checkbox"/> PREG. <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pwks. _____		<input type="checkbox"/> Unconf
<input type="checkbox"/> Moist	<input type="checkbox"/> Warm	<input type="checkbox"/> Flushed	WT: _____	HT: _____	Last Teleread: _____
<input type="checkbox"/> Diaphoretic	<input type="checkbox"/> Cool	<input type="checkbox"/> Jaundiced	PMH: <u>2</u>	Meds: <u>2</u>	
	<input type="checkbox"/> Cold	<input type="checkbox"/> Cyanotic			
		<input type="checkbox"/> Ashen			

Procedures: ☐ Ice and elevation
☐ spirit / dress. applied

Triage Labs _____ Informant: Pl Other: EMS Interpreter: _____

Service/ILD/PH notified: _____ Time: _____ Rape Advocate: _____ Time: _____ ☐ Medical Records called for Time: _____
 Plan after screening: ☐ FWR ☐ INTERVIEW ROOM ☐ SCREENING AREA ☐ SECURITY RM. ☐ FAM. RM. ☐ MODULE
 Condition after screening: ☐ Good ☐ Fair ☐ Poor Nurse sig./Title: _____

[illegible]

V.S. Arrival Time _____ Ingoing Arrival Time _____	RTS = Revised Trauma Score EB = Estimated Blood Loss	VASCULAR CHECKS Pulses _____ () present (x) absent A. decreased R.A. Right Arm L.A. Left Arm S. Swelling () present (x) absent R.L. Right Leg L.L. Left Leg	LEGEND. FWA - Front Waiting Room PTA - Prior Arrival Time C.C. - Clean Catch P.B. - Pump D.D. - Duration
---	---	---	--

CHART ORDER -

[illegible][illegible]

Nurse/Technician Initials/Signatures

Nurse/Technician Initials/Signatures _____

NURSES NOTES

ADMIT: 2150 Admitted To: 717-1

TIME: 2150 ☐ Transferred To: _____

MEANS OF TRANSPORT: ☐ AMB. ☐ W/C ☒ STRETCHER ☐ OTHER _____

Report called to: _____ Name/Title _____ Time: 2150

Discharge Summary: _____

NURSES NOTES

TIME: 1700 ☐ TO RM# COND: GOOD FAIR POOR

2 numbers / thingy. Name
any other C/P finding in
1810 backboard: C-talon
removed from pt: 5 mthalam
took pt to the m. instr. & then
1930: pt returned from the
room, ambulated to use gym
coat steady. pt perusal admin
2100: B.H. lunch again pt
infused pain med at the time
C/P pressure from 1.2
2150: report called to floor. 2

- no pressure pain from eye

ADMIT: ☒ Admitted To: 717-1
TIME: 2150 ☐ Transferred To: _____
MEANS OF TRANSPORT: ☐ AMB. ☐ W/C ☒ STRETCHER ☐ OTHER _____
Report called to: _____ Name/Title _____ Time: 2150
Discharge Summary: _____

SARD.: ☒ yes ☐ no Advanced Directives ☐ yes ☐ no
 Instructions to: PT Conditions Good Fair Poor
 Catching to: PT Valuable to: PT
 Form #95 ☒ Yes ☐ No Form #95 ☒ Yes ☐ No
 By: DAVID S. Smith By: DAVID S. Smith Date: 4/6 Time: 2157

Discharge Instructions to: ☐ Patient ☐ Other _____
☐ English ☐ Spanish ☐ Other _____

Instruction Form(s) given: _____
Instructions: ☐ Citric appt. ☐ Pre-cl lab/x-ray ☐ Other _____

() Med. Instruct. _____

Dismissed by: DMB DWO C STRETCHER
Dismissal Summary:

Condition: ☐ Good ☐ Fair ☐ Poor ☐ Unknown
 Understand instructions given to me by nurse/physician and know to call or return if any problems arise

Page 1 of 1

DISCHARGE SUMMARY

PATIENT NAME	HOSP NO	ADMIT DATE	DISCH DATE	OP DATE
--------------	---------	------------	------------	---------

96

96

HISTORY OF PRESENT ILLNESS: The patient is a black female who was involved in a motor vehicle accident, She had a deployment of her air bag and sustained blunt trauma to her left eye. She also sustained trauma to her chest area and was a little bit sore in this area. Ophthalmology was consulted from the Emergency Room and she presented with hyphema, iridodialysis, commotional retina in the left. She was subsequently admitted to the Ophthalmology service for management of the hyphema in the left eye. Surgery had cleared her from her chest wall injuries and there were no major abnormalities noted.

PAST MEDICAL HISTORY: None. PAST SURGICAL HISTORY - none. ALLERGIES - no known drug allergies. MEDICATIONS ON ADMISSION - none. Review of systems - within normal limits.

PHYSICAL EXAMINATION: Vital signs stable within normal limits. HEENT - normocephalic. Ocular examination showed visual acuity of 20/20 right eye and light perception with projection vision in the left eye. Pupils 3-2 right eye, distorted pupil in the left eye. No APD seen, but hippus was noted on the pupillary exam. Extraocular motility was totally intact. Right eye did not suffer any abrasions externally. Left eye showed significant periorbital edema with ecchymosis and superficial abrasions of her skin. Anterior segment exam on the right eye within normal limits. Anterior segment exam on the left eye showed 360 degree ecchymosis with injection. The cornea had an epithelial defect that was approximately 80-90% of the cornea. The cornea had 2+ descemet's folds with 2+ corneal edema. The anterior chamber showed blood clot with nonlayering hyphema. The lens was clear at this time and the anterior chamber was not deeper than the right eye. Pressure 23 right eye, 10,12,14 in the left eye after measuring three times. Posterior pole exam showed no abnormalities in the right eye. The left eye was difficult view, however, there was significant commio retina in the inferior portion of the fundus. There was a small of vitreous hemorrhage immediately in front of the macula. LUNGS - clear to auscultation bilaterally. CHEST - some tenderness to palpation along the sternal areas. CARDIOVASCULAR - regular rate and rhythm without murmur, rubs or gallops. ABDOMEN - soft, nontender, nondistended with positive bowel sounds. PELVIC and RECTAL - deferred. EXTREMITIES - all within normal limits. NEUROLOGICAL - intact for cranial nerves II/XII. No focal or motor deficits.

LABORATORY DATA: Sickie dex and hemoglobin electrophoresis ~~that~~ was done. Sickie dex normal and hemoglobin electrophoresis still pending on discharge.

-CONTINUE TO PAGE 2-

DISCHARGE SUMMARY

DISCHARGE SUMMARY

PATIENT NAME	HOSP NO	ADMIT DATE	DISCH DATE	OP DATE
		96	96	

- page two -

HOSPITAL COURSE: The patient was admitted to the Ophthalmology Service for management of her hyphema. She was started on Pred-Forte 1%, 1 drop in the left eye, QID; Atropine 1%, 1 drop left eye, BID; Bacitracin ophthalmic ointment 1/2" left eye, TID. The patient was seen the following morning on 96. Vision was unchanged and may be a trace APD versus hippus on the pupillary exam. The epithelial defect had started to heal and was coming in from the temporal side. Anterior segment showed no significant change from the previous day and had about a 2-2.5 mm hyphema with total iridodialysis from seven to two o'clock going clockwise. The cornea was still edematous with descemet's folds. The view into the posterior pole was hazy. The following day the visual acuity was still the same. The hyphema was still 2 mm in height. The lens showed an early cataract. On 96, the patient was seen and the left eye showed the same vision which was light perception with projection. Pupillary exam again showed trace APD versus hippus on the left eye on testing with the swinging flashlight test. Pressure was 12 in the left eye. Anterior segment exam showed that the epithelium was starting to cover the cornea and there was a 7.5 x approximately 8.4 mm defect measured in the greatest axis of the epithelial defect. The corneal edema had begun to resolve and there were fewer descemet's folds. Hyphema was approximately 1.5 mm in height and the iris was still touching the corneal epithelium in the central area. The lens had definitely formed early cataract at this stage and there was no U into the posterior pole. Because of this a B scan was obtained. Examination of the posterior segment structures revealed no retinal detachment. Because the patient had not rebleed, we felt it was safe to let the patient go and follow-up on an outpatient basis. The patient had worn a fox shield in the hospital at all times.

DISCHARGE MEDICATIONS: Pred-Forte 1%, 1 drop left eye, QID.
Atropine 1%, 1 drop, left eye, BID.
Bacitracin ophthalmic ointment 1/2" left eye, TID.
Tylenol #3, 1 po, q 4-6 hrs prn pain.

DISCHARGE ACTIVITY: Limited to bedrest and just sitting and watching television with wearing of the fox shield at all times. The patient is to take no aspirin whatsoever, aspirin products or NSAID. The patient was told to use only the Tylenol #3 or Tylenol for pain.

FOLLOW-UP: Patient will follow-up with at the
Eye Clinic on 96 in the afternoon.

M.D.
Ophthalmology/SATS/rh
DD: 1996
DT: 1996

PHYSICIAN ATTESTATION STATEMENT

NAME ACCT MED REC NO
ADM/VST DATE 96 DIS/DEPART DATE 96
DATE OF BIRTH 54 AGE SEX F LOS 0003 DSCH DISP 01
ATTENDING PHYSICIAN

MDC 02
DRG 043 HYPHEMA
OUTLIER STATUS LONG STAY CHARGES 1419.50 REIMB 2367.40

PRINCIPAL DIAGNOSIS

1. 921.3 CONTUSION OF EYEBALL

SECONDARY DIAGNOSES

DIAGNOSIS TYPE

2. 364.76 IRIDODIALYSIS
3. 921.2 CONTUSION ORBITAL TISSUE
4. 379.23 VITREOUS HEMORRHAGE
5. 366.20 TRAUMATIC CATARACT NOS
6. 371.20 CORNEAL EDEMA NOS
7. E816.0 LOSS CONTROL MV ACC-DRIV
8. E917.9 STRUCK BY OBJ/PERSON NEC

I CERTIFY THAT THE NARRATIVE DESCRIPTIONS OF THE PRINCIPAL AND SECONDARY
DIAGNOSES AND THE MAJOR PROCEDURES PERFORMED ARE ACCURATE AND COMPLETE
TO THE BEST OF MY KNOWLEDGE.

ATTENDING PHYSICIAN

DATE

Patient Information

Page 1 of 3

Date: 96 Time:

(Circle or strike through where appropriate)

History of Present Illness: 42 Y/O B/P
lost control of car and hit
side rail, went off in
left side, facial abrasion
swelling. LOC code II
neck back pain
no other complaints.

Scene Information:
Est. Time of Injury: 4:30
Scene Blood Pressure: 80/50
L.O.C. YES NO
Hemodynamically: Stable
Unstable
Intubated: YES NO
Transport: SA EMS
Airline
Other EMS
Critical Air
Private Vehicle
Evidence of ETOH at Scene: NO

Penetrating:
GSW
Handgun
Assault Rifle
Sport Rifle
Other:
Caliber:
Distance:
Shotgun Wound
Distance:
Gauge:
Stab Wound
Knife
Ice Pick
Glass
Other:

Blunt:
Motor Vehicle Crash
High Speed
of Vehicles: 1 2 3 >3
Head On Collision
Lateral Impact: Rt Lt
Rear Impact
Rollover
Driver Passenger
Prolonged Extrication
Major Vehicular Deformity
Collapse of Steering Column
Ejected from Vehicle
Death at Scene
Restrained: YES NO
AirBag: YES NO Dep.

Past Medical History: Ø

Past Surgical History: Ø

Medications: Ø

Allergies: NKA

Immun.: Ø

NPO Since?:

Social History:

Occupation:

Alcohol Use: Ø

Tobacco: Ø

Drug Use: Ø

ROS:

MV-Pedestrian Collision
Cycle Crash
Motorcycle
Bicycle
Helmet: YES NO
Assault
Fist Kick
Club Other:
Fall
Standing
Height:

Psychiatric History: Ø

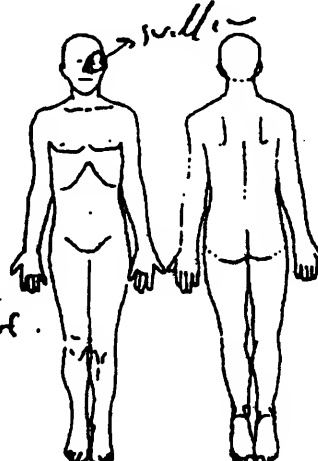
V.S. BP 137/80 P 80 R 18 Temp 98.7 O₂ Sat 100%

General Appearance: A & O + 3 NAD

Head: (C) Prior orbital swelling and abrasion
Midface
Eyes: cannot examine (C) eye 2" to swelling.
Ears: clear (C) eye clear.
Nose: clear
Mouth: clear
Pharynx: clear

Neck: Tracheal Deviation? YES NO
Tender spine? YES NO
JVD? YES NO

Chest: External Evidence of Trauma:
Able to take deep inspiration without pain? YES NO
Breath Sounds: clear
Heart Sounds: normal



HP

Patient Information

Page 2 of 3

(Circle or strike through where appropriate)

Abdomen: *soft nt & dull (+) RS.*

Back: *nt & diffusely tender.*

Pelvis: AP Compression of Iliac Crests? *Stable* Unstable Tender *Nontender*
 AP Compression Symphysis Pubis? *Stable* Unstable Tender *Nontender*
 Lacerations? YES NO

Genitalia: *nl*

Perineum: *nl*

Pulses



Rectal: *nt & bkg*

Extremities:
 Deformities: NO YES:
 Lacerations: NO YES:
 Neurologic Impairment: NO YES:
 Bruits? NO YES:

Open Fracture	YES	NO
Open Joint	YES	NO
Knee Dislocation	YES	NO
Dislocated Hip	YES	NO

Neuro: Level of Consciousness: *AVPU*
 Pupils: *3-3 equal*
 Motor: *4/5 intact*
 Sensation: *intact*
 Reflexes: *2+*

Oriented: *Person Place Time*

X-Rays:

CXR *clear.*

Cervical Spine

Pelvis

KUB/IVP

Other Films:

Head CT Scan:

Abdominal CT Scan:

Angiography:

Glasgow Coma Score (Circle)		
Eye Opening	Verbal	Motor
5=Spontaneous 4=To voice 3=To Pain 2=To Pain 1=None	5=Normal conversation 4=Disoriented conversation 3=Words but not coherent 2=No words.....only sounds 1=None	6=Normal 5=Localizes to pain 4=Withdraws to pain 3=Decorticate 2=Decerebrate 1=None
Total <i>15</i>		

Revised Trauma Score (Circle)

Respiratory Rate	Systolic BP	GCS
10-24 = 4 25-35 = 3 >35 = 2 1-9 = 1 0 = 0	>89 = 4 70-89 = 3 50-69 = 2 1-49 = 1 0 = 0	13-15 = 4 9-12 = 3 6-8 = 2 4-5 = 1 3 = 0
Total:		

Lab:

Hematocrit: *33*

ABG: pH PaO₂ PCO₂ BE

DPL:

Alcohol:

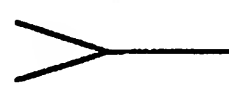
Urinalysis:

Toxicol:



LFT's:

B-HCG



Patient Information

Page 3 of 3

(Circle or strike through where appropriate)

Assessment:

42 y/o S/I
MVA
mv-A air bag
N/C in eye
eye injury
eye injury

Injury List:

peri-orbital
(L) peri-orbital swelling
& damage to Iris
and cornea
small? web space
(L) hand sutured primarily,
laceration sutured

admission

Plan:

cleared for admission by
- ophthalmology clinic for hand suture removal
- Plastics clinic for hand suture removal

Faculty Note:

Physician:

ID:

Physician:

ID:

Consultations

Service	Time Called
Anesthesia	
CT Surgery	
Max-Fac Surgery	
Neurosurgery	
Obstetrics	
Ophthalmology	
Orthopedics	
Pediatrics	
Plastic Surgery	
Rehab Medicine	
Respirology	

PROGRESS NOTES/HISTORY

BT / b.m.

Date

9/6

OPHTHAL H&P.

40. BF in MVA - severe trauma to OS from Air bag

Admitted for hyphema - OS.

PMH / PSH meds NKDA SH ϕ ROS ϕ Benzyl ϕ b / Eton

PE

VSS - w/abuse

MRENT -

ALC -

dysphagia

throat moist

Vg (20/30)
sc Lp

X X

TAC²³
12, 10, 14

Ant seg WML OS OS

conj - 2+ chemosis

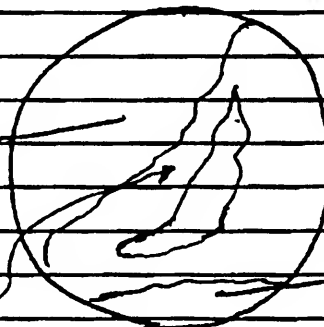
cornea

2+ stromal

edema

 ϕ xpi defect

iris touches back of cornea

AC - 3-4+ deep
1+ cells.

lens - ? phacoclenosis.

1.5
small hyphema/blood clot.

DPR

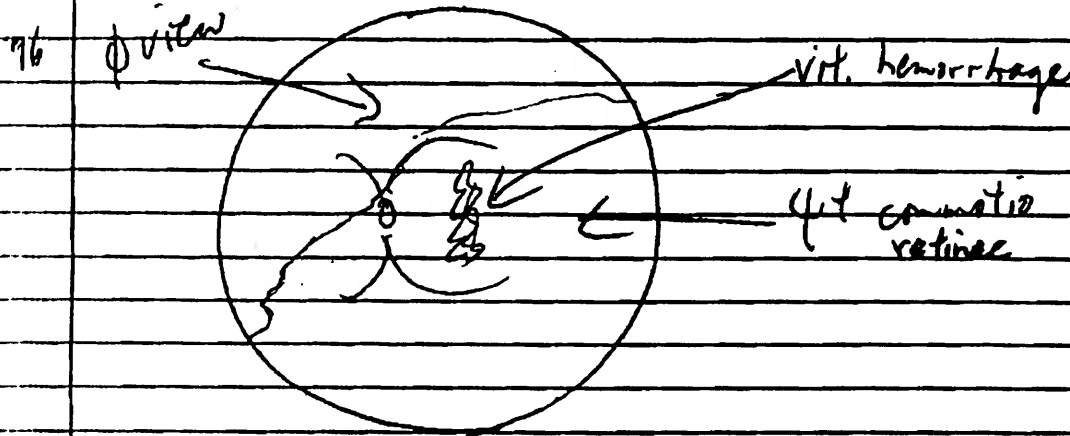
C/D 0.45
0.4m good LE
Vd laneV WML
hyppP WML
conotio

next page →

PROGRESS NOTES/HISTORY

RF/BAP

Date



Lungs - CTA Chest - Tenderness (Ant chest)
 Heart - RRR nl S. S.
 Abd - Obese, NT, NO

Ext - Ocle/o
 Neuro - nl said, CV II-XII intact, DTR 2+ throughout

AIP 1) Hyphema OS

- Hemoglobin electrophoresis in one shot (later) Tylenol/Tylenol #3 pm
- Atropine 1%, PF 10% BID
- Foxe shield at all times OS
- Bacitracin q6

2) Iridodialysis OS 6-7 clock hours

- 2 possible cyclodialysis cleft, ↓ IOP OS
- Observe

3) Periorbital Contusion OS

4) Eyelid Abrasion OS - Bacitracin TID

5) Commotio Retinae OS - Observe

6) Vitreous hemorrhage OS - Observe, HOB slacker 30°

PROGRESS NOTES/HISTORY

MEDICAL RECORDS

CHART ORDER #

PN (Cont'd.)

PROGRESS NOTES/HISTORY

Date

Ophthalm

9/6

S: pt feeling better. S/P alkali injury
OS.

VA

HM at 2ft

TA

18

EDM *

trace

P: 3 → 2 API

iridodialysis

SLE OD WNL

Labs ss prep: pending.

OS:

LH/L 2+ ^{edema} injection, superficial lac upper lid
conj F. stainingpieces of
foreign body in
conjunctiva2+ conj:
chemosis
conjunctival
hemorrhageepithelial
loss
diffuse
stainingcorneal
epithelium
bet 3-6 o'clockTris
disinserted
AC
H cells
flame
difficult to
see

2-3+ Descemet fold

2-3+ corneal edema

2-5mm hyphema

Tris touching
endothelium

next page

Date

96 ODL4610

A/P

① S/P MVA & Airbag injury OS

1. Iridodialysis OS
2. AIC hyphema OS
3. 85% corneal epithelial loss OS
4. Corneal edema
5. conjunctival chemosis & hemorrhage ^{epith} & ^{base} defect
6. vitreous hemorrhage
7. Lamellar Retinal OS
8. lid abrasion & edema OS
9. trace APD OS

plan

1. PEH, tight OS QID
2. ~~1% I~~ OS QID
3. Tobradex ophthalmic ointment OS QID
4. Fox shield to OS all the time
5. keep HOB elevated
6. B-Scan CN
7. FU in am

PN (cont'd.)

PROGRESS NOTES/HISTORY

Date	
9/11/00	<p>Nursing Admit Note: Arrived to floor from EC</p> <p>5/1 Hypertension and Ocular abrasion 2° to MVA (air bag).</p> <p>BP very elevated = DBP of 122. Mod % facial pain no neurodeficits. notified of BP, procordic given = significant improvement (see flow sheet).</p> <p>Pt A+Ox3, NAD. some chest soreness 2° to seat belt trauma. Presented to floor, room + policy. Explained and provided advance directive materials - she declined initiated adv. dir. @ this time. Wounding to abd/thorax @ BS, LCTA, can't see out of eye @ present @ IVA.</p>
9/11/00	<p>Issues: BP elevation</p>
150	<p>Data: Hypertension 08, fox shield on to OS, HOB ↑ 30° Pt went to exp clinic today. BP @ 1300/109/102</p>
	<p>Action: manually. Notified Opth Procordic 10mg SL admin, HOB ↑ pt asymptomatic</p>
	<p>Response: BP @ 150/90 no prn procordia ordered Pt @ no H of HOB but father is MR. Cust to Flu @ monitor BP q4h —</p>

Date

96

Focus: Shift summary 3-11

Data: hypoxemia OS, Fox Shield @ all Times, HOB \uparrow 30°

Action: monitor VS, BP, drops as scheduled. Assist \bar{c} ADL's prn.

Response: VSSAF, OS edematous \bar{c} erythema, All other assessments wnl.
Ant to assist \bar{c} ADL's and monitor

PN (cont'd.)

PROGRESS NOTES/HISTORY

Date

96

Staff Note - Ophthalmol

0930

PH 5/P MVA

96 E ambly deployment.

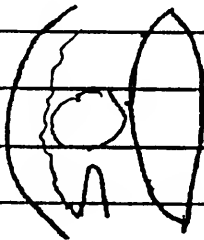
V₂₀/SL/LP

EPR: facial abrasions / burns.

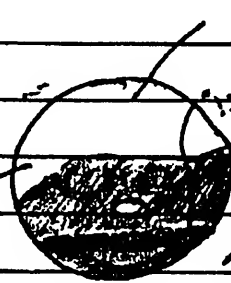
ECOM: full

P3-2 Trace
APD
Unmy

PUPILS:
SLER



80%
epith defect



cataract?

epithelium

2.5 mm

No view of fundus

DFF

Vitrous hemorrhage as

consideration of

Poor view as

H1. Multiple abnormalities as listed
except

SL - unchanged

PLAN: CPM B scan

Photos & B scan tomorrow

PROGRESS NOTES/HISTORY

[] INPATIENT [] OUTPATIENT

CHART ORDER #

PN (Cont'd.)

Date

910 Focus: ↑BP

1430 Data: Hyphema OS, fox shield on AOB ↑30° pts BP @ 1200 150/98

Action: Notified, Procordia 10mg SL admin/ordered x1 dose: retake BP in 90°

Response: RSS BP 10 later 152/94, well, F/u to Opth pt asymptomatic w/ c/pain. Note left in chart per request for int med to see pt about ↑BP.

916 Focus: ↑BP

Data: BP 170/110, P 87, afebrile, 40 H/A

Action: monitor BP q 30°, notified, Procordia 10mg SL x1 adm.

Response: BP 186/116 manually, vs otherwise stable.

paged, no response, well cont to page: pass on to next phr to cont monitor BP closely.

PN (cont'd.)

PROGRESS NOTES/HISTORY

Date _____

OPH THAL

१६

NEW

PH. reports no new pain. No change in vision.

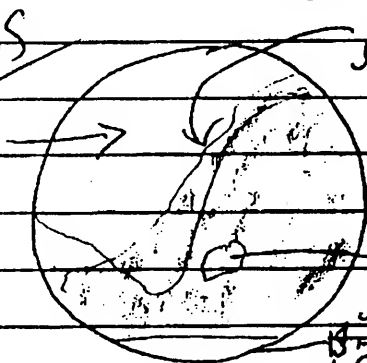
V_A $\left\{ \begin{array}{l} 2700 \\ LP \text{ projection} \end{array} \right.$

T_n

$p < 3 \rightarrow 2$ to APD is hippos.
p mail

05

Ex
dukt



edge of
it is (necrotic)
corner 2+ d-folds, 1+ edema
AC - 2.5+ deep
lens - early cataract

distorted pupil.

~~Brachyphema~~

DFE / ϕ View

Ans 1. Mammal blunt trauma OS 2:

hypophosphatemia, epithelial defect, corneal edema, endothelial dysfunction, cataract

PLAN: ^{Scan} Bcom today

D/C home

Fax Shua

Alto ASA Aspirin

Limit activity

F/U c mee Friday Ety.

Abbas

PF

Breitung

Date

As Note

96

Focus: Discharge Summary

Data: Pt & hypophem + corneal abrasion, facial abrasion

Action: Pt instructed on eye gtl administration, to avoid
bending forward, straining or heavy lifting. 7ke eye
sig given, script for eye gtl + Tylenol #3 given.

Response: Pt verbalized understanding of all instructions
at waiting for ride.

Additional: Pt rode here, taken down ambulance
by attendant —

PN (Cont'd.)

CONSULTATION REQUEST

To: Consulting Service: <u>ophthalmology</u>		From/Requested By:	Iridodialysis 364.76
Reason for Request: <u>slp mva @ Periorbital swelling</u>		Service: <u>ER</u>	Hyphema 364.41
Provisional Diagnosis: <u>K/O eye injury</u>		Attending M.D.:	Comminuted fracture 921.5
Location: <u>Inpatient</u>		House Officer:	Vitreous Hemorrhage 379.23
Room#	Bed#	Date of Request: <u>9/6</u>	Time of Request: <u>5:45</u>
			<input type="checkbox"/> am <input checked="" type="checkbox"/> pm
			<input type="checkbox"/> Emergency <input type="checkbox"/> Routine

Y/O BF in MVA a hour ago @ Deployed Air bag (It was driving)
 Pt noted immediate vision loss out of OS (black) @ rapid swelling @
 @ eyelids @ Pain @ BOM

PHH
 Dislocated hyp

PSH
 @

Mals

- Benadryl OTC

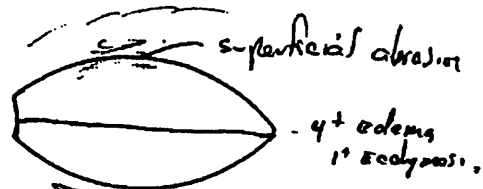
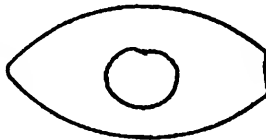
NKDA

VA < 20/80 PR 20/50
 LP only

P < 2-1.5 mm
 Iris dissection

TA < 23
 12, 14, 10
 difficult to measure

SLG
LCL



c/s < wdp

360° chemosis @ subconjunctival bleed

Cor < c/c @ sclera



2+ corneal edema

AIC < @ @



Iris dissection
 hyphema - not settled

Iris < Fht

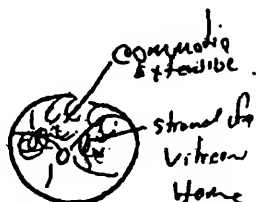


Lens - cleavage @ zonular disinsertion

DFG
CLO < 1.45

M- < Fht

V < 1/3
 P < Fht



AIP @ Iridodialysis OS
 2-6 clock hours, high risk R.
 - Possibly may have glaucoma
 2) Hyphema
 - Anterior, Atrophic, PF, Vortex
 - Fony theil
 3) Comminuted fracture - involving Maxilla

Date of Consultation: <u>9/6</u>	Time of Consultation: <u>6:00</u>	Consultant M.D. Signature: _____	Requesting M.D. Contact Number: _____
		<input checked="" type="checkbox"/> voice <input type="checkbox"/> fax	<input type="checkbox"/> digital pager <input type="checkbox"/> voice pager

Consultation Request 5) Skin Abrasion - facial, neck, 2nd & 3rd - Consulting Dept. () Inpatient () Outpatient
 6) Periorbital Contusion - I/O T10 + 24
 Original - Medical Record
 4) Vitreous Hemorrhage OS
 may be from Ant Chamber
 Over flow of haw mlt vitreous
 Chart Order # P 410 OP 150
 Over flow of haw mlt vitreous

CN

DI

EXAMINATION

facial series

EXAMINATION WILL NOT BE DONE IF PERTINENT CLINICAL INFORMATION AND TENTATIVE DIAGNOSIS NOT PROVIDED BELOW:

SLA - A

Rto H.

X REQUESTING PHYSICIAN'S SIGNATURE CODE #:

SERVICE (PLEASE INDICATE)

Site: ☐ UH ☐ IP ☐ OP ☐ UHCD ☐ Other:

PATIENT REQUEST TRANSPORTATION

☐ PREGNANT ☐ PORTABLE ☐ AMBULATORY

☐ REQUIRE O2 ☐ STAT REPORT ☐ WHEEL CHAIR

☐ DIABETIC ☐ STRETCHER

☐ OTHER:

DATA PREPARED BY

RADIOLOGY DEPARTMENT ONLY		QUANTITY	CHARGE CODE	CATEGORY	ACR	PATHOLOGY
DATE: 96 TIME: 1745		1				
DATE, LOC/AND TYPE: PREVIOUS EXAM						
7x17 8x18 11x14 14x17						
4 8x10 10x12 14x14 14x36						
CC OF INJ AT						
X TECHNOLOGIST SIGNATURE						

Swelling No fr

Ear

CLINICIAN'S INTERPRETATION

X CLINICIAN'S SIGNATURE I.D. #

RADIOLOGY REPORT

HISTORY: Suspected fracture.

FACIAL SERIES, 96, 1745

FINDINGS: Moderate soft tissue swelling over the left maxillary region with no underlying fracture. There is mucoperiosteal thickening in the left maxillary sinus, possibly representing sinusitis or reactive edema to localized trauma. No other abnormality is seen.

96

96

M.D.
RADIOLOGY RESIDENT
DIAGNOSTIC RADIOLOGY

M.D.
RADIOLOGIST
CHART ORDER #

MEDICAL RECORDS

RADIOLOGICAL CONSULTATION REQUEST/REPORT

ENGINEERING REPORT
ASSESSING CASE VEHICLE'S
STEERING AND FRONT END COMPONENTS

**ASSESSMENT OF THE STEERING AND FRONT END COMPONENTS
OF THE 1992 MAZDA 929.**

1996

PREPARED BY

REPORT NUMBER:

1996

PREPARED FOR

CLAIM NUMBER:

POLICY NUMBER:

RECEIVED _____

COPIED _____

SENT Ex. 76
Sept 76

ENGINEERING REPORT

**ASSESSMENT OF THE STEERING AND FRONT END COMPONENTS
OF THE 1992 MAZDA 929,**

PROJECT NUMBER:

PROJECT ENGINEER:

CLIENT:

LOSS INFORMATION: Date - 1996
Type - Automobile accident
Location -

INSURED:

POLICY NUMBER:

CLAIM NUMBER:

The 1992 Mazda 929 owned by _____ was involved in an automobile accident
on _____ 1996. _____ complained of steering problems with the vehicle.

_____ with _____ contacted
and asked that we assess the condition of the steering mechanism and the front
wheel suspension components for evidence of anomalies which could have
contributed to a steering problem as _____ described. I traveled to the
_____ on _____ 1996, to examine and document the condition of the
vehicle.

When _____ contacted me, he told me that the accident on _____ 1996, had
caused more significant damage to the driver side front of the vehicle.

also told me he had learned that this vehicle had been involved in another accident in 1994. He stated that that accident had caused more damage to the front on the passenger side. asked that I examine the components on this side to see if there were any residual damage which could have affected the steering of the vehicle.

The 1992 Mazda 929 driven by at the time of the accident is depicted in photographs 1-6. As these photographs reveal, the most extensive damage to the vehicle has occurred on the driver side front. In fact, the front of the vehicle had been shifted toward the driver side and had almost pinned the left front wheel in the fender well. The vehicle identification number is shown in photograph 8 and confirms that this was the vehicle.

The front suspension components on the passenger side are depicted in photographs 9-22. Examination of these components did not reveal any residual impact damage from the 1994 accident. In fact, I was able to perform a limited test of the steering after the vehicle was raised on jack stands. The steering turned easily in both directions.

During the steering test, one unusual characteristic was noted. When the steering was turned to the extreme right, I encountered a solid stop which would not allow me to continue to turn the wheels. The stop was indicative of metal-to-metal contact.

However, when the steering was turned to the extreme left, no stop was encountered. When the steering reached what appeared to be the left extremity, there was a sponginess, and I was able to force the wheels further to the left. Whether this characteristic was a result of either of the accidents is unknown. Study of the front end components failed to reveal the presence of an external mechanical stop. However, it is possible that a stop was located in the rack and pinion steering mechanism. This characteristic only affected the steering at the extremes and would, therefore, not come into play under normal circumstances. I also noted that the front tire on the passenger side (see photograph 13) exhibited evidence of more wear to the inside. It is my belief that the right front suspension was out of alignment. Examination of the brake pads and rotor (see photograph 21-22) revealed no evidence of an anomaly.

The only anomaly which I believe could possibly be attributed to a previous accident on the passenger side front of the vehicle is shown in photographs 15-20. A significant amount of rusting was present on a section of the frame and the stabilizer bar for the passenger side front suspension. Since this side of the vehicle was involved in an earlier accident, it is possible that heat was applied to this portion of the vehicle to straighten some of these members. The only logical explanation for the rust present on these components is the application of heat, and in this case, severe heat because the paint and galvanizing on these components were burned

away. However, I did not detect any mechanical affect attributable to the rusting on these front end components.

The front suspension assembly for the driver side is depicted in photographs 23-32. Examination of these components did not reveal any evidence of an anomaly which would have affected the ability to steer the vehicle. The only steering anomaly noted was the one discussed above when the wheels were turned to the extreme left. The stabilizer bar for the front suspension on the driver side (see photograph 26) did not exhibit the rusting present on the passenger side stabilizer bar. Also, the mounting bracket for the stabilizer bar on the front frame (see photograph 29) did not exhibit the rusting present on the passenger side. The tread of the driver side front tire (see photograph 30) did not exhibit the wear characteristics of the passenger side front tire. The wear on the driver side front tire was uniform across the tread. Examination of the brake rotor and calipers on the driver side as shown in photographs 31-32 revealed no evidence of a problem. All indicators were that the front suspension and the steering assembly on the driver side of the vehicle were in good condition.

Even though this vehicle had apparently been involved in two accidents, the overall condition of the front end components appeared to be quite good. With the exception of the rusting noted on the passenger side front frame and stabilizer bar, all other components appeared to be in good condition. The fact that the steering

did not come to a hard stop when steered all the way to the left did not appear to be a significant factor in the ability to steer this vehicle. Very rarely does one ever steer all the way to the left or right unless making a very low speed operation such as parking.

In conclusion, based upon my examination of the 1992 Mazda 929, it is my opinion that there were no problems with the steering or front end assembly which had a bearing upon this accident.

9/